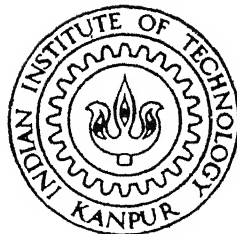


PROCESS OF TQM IMPLEMENTATION : A CASE STUDY OF MARUTI UDYOG

by
Ved Prakash Singh



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M DEPARTMENT OF INDUSTRIAL AND MANAGEMENT ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY KANPUR

March, 1997

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PROCESS OF TQM IMPLEMENTATION : A CASE STUDY OF MARUTI UDYOG

**A Thesis Submitted
in Partial Fulfilment of the Requirements
for the Degree of**

MASTER OF TECHNOLOGY

BY

VED PRAKASH SINGH

to the

**DEPARTMENT OF INDUSTRIAL AND MANAGEMENT ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, KANPUR**

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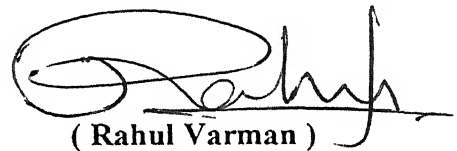
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CERTIFICATE

It is to certify that the work contained in the thesis entitled **“PROCESS OF TQM IMPLEMENTATION : A CASE STUDY OF MARUTI UDYOG”** by Ved Prakash Singh, has been carried out under my supervision and that this work has not been submitted elsewhere for a degree.

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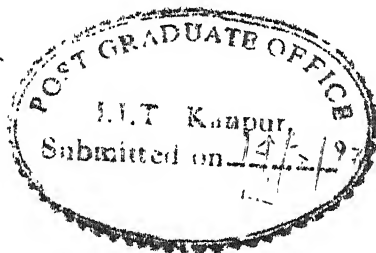
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ABSTRACT

Quality of products and services is getting increasing importance among the factors affecting the buying behavior of consumers. Total Quality management (TQM) today has become one of the most significant tools to improve company performance. In effort to stay close to the market, companies are adopting TQM. TQM aims at continuously improving each and every process of the organization, with the ultimate aim of customer satisfaction. The experiences in the past show that behavioral factors are far more important determinant of TQM's success. The present study attempts to understand the TQM implementation in areas that determine employees' behavior in the organization. Through the case study of Maruti Udyog Ltd., the thesis discusses the process of change involved in seven key aspects of TQM : Commitment of Top Management, Empowerment & Involvement, Group Activity, Performance Appraisal and Reward System, Inter-departmental Relationship, Relation with External Suppliers and Customer Orientation. Finally, the case has been analyzed from the point of view of different constituents in the organization to draw learnings from the case.

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March, 1997

Ved Prakash Singh

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ABBREVIATION

ATP	Annual Training Plan
CMIE	Centre for Monitoring Indian Economy
DDVM	Dy. Divisional Manager
DPM	Department Manager
DVM	Divisional Manager
EA	Engine Assembly
Est.	Establishment
Ex. Dir.	Executive director
FPP	First Production Part
HM	Hindustan Motors
JMD	Joint Managing Director
JV	Joint Venture
M&M	Mahindra & Mahindra
MASS	Maruti Authorized Service Station
MC	Management Committee
MCM	Management Committee Meeting
MD	Managing Director
MIRA	Motor Industry Research Association
MIS	Maruti Inspection Standards
MIS-P	Maruti Inspection Standards for Parts
MOS	Maruti Operating Standards
MPCR	Market Problem Countermeasure Report
MUL	Maruti Udyog Ltd
MX	Stores
PAL	Premier Automobiles Ltd.
Pers.&Admn.	Personnel & Administration
PI	Parts Inspection
PKC	Productivity, <i>Kaizen</i> & Cost Cutting
PSU	Public Sector Unit
QA	Quality Assurance
QAG	Quality Administration Group
QC	Quality Control
QIR	Quality Information Report
QPCR	Quality Problem Countermeasure Report
QS	Quality System
SMC	Suzuki Motor Company
SRV	Store Receipt Voucher
SS	Suggestion Scheme
Telco	Tata Engineering & Locomotive Company Ltd.
TQM	Total Quality Management
VD	Vendor Development

INTRODUCTION

1.1 Rationale of the Study

Quality in products and services, has long been regarded a matter of operational excellence. With its heavy inclination towards statistics, it has been viewed upon as the responsibility of quality experts in the organization, to ensure that the products meet the quality standards. But such was the case in those days when an organization could decide about a fixed and static, expected and acceptable quality level and get on with it. With increasing consumer awareness and therefore, expectations, the line of acceptable quality level is getting blurred or more concretely saying, has become dynamic. It is no longer static at a certain point of time. This realization did not come naturally. Several world class western organizations of '50s and '60s, which were pioneer in starting and using statistical quality control systems, started to be given a run for their money by their lesser known and long neglected Japanese counterparts in '70s and '80s. After World War II, the economy of Japan was totally decimated. In the early '50s, the Japanese Union of Scientists and Engineers (JUSE) invited Dr. Deming to speak to Japan's leading industrialists. At the time, he was the only person who offered any hope toward the resolution of Japan's problems. Dr. Deming taught the Japanese industrialists : the value of the Plan-Do-Study-Act (PDSA) cycle, the managerial significance of the distinction between special and system causes of variation, the value of statistical methods on the factory floor, that quality concepts are equally applicable in manufacturing and non-manufacturing environments, and to view an organization as a system (an interdependent system of stakeholders). The industrialists took Dr. Deming's teachings to heart and Japanese quality, productivity, and competitive position were improved and strengthened tremendously. Dr. Deming preached his "system of profound knowledge" (on which TQM is based) in 1980. So what were the Japanese doing between 1950 and 1980 for quality management? They had taken the teachings of Deming, Juran and others, and created their own school of thought on quality management, Japanese Total Quality Control (TQC). It is empirically based on experiences of what works in Japanese companies. Also, it has highly developed administrative systems by which organizational leaders can practice quality management. These systems include education, training, and

self-improvement; daily management; cross-functional management; and policy management. After receiving stiff competition from Japanese companies, Western companies turned again to man who was behind Japanese success and Dr. Deming gave them his "System of Profound Knowledge" as a guideline for quality practices in their organizations. What is the crux of his preaching? He says that to satisfy your customers, each of your process should be evaluated in terms of how it enhances/diminishes your efforts to satisfy the customers. This gave birth to Total Quality Management (TQM) in its modern form. It asks the corporations to stay close to the market place, to monitor and detect the sentiments of the consumers and quickly present to customers, the products and services required to fulfill his identified and unidentified needs. Customer identification and oversatisfying him/her is the new 'mantra' for survival in market place today. Now, unlike earlier, TQM is regarded as a management strategy for survival in the market place.

What happened to western corporations 20 years ago, is happening to Indian corporates now. One does not have to go long way back. Just look at the period 6-7 years ago, when Indian companies used to take customers for a ride. The subsequent opening up of the Indian economy and the fast globalisation of it, is threatening once famous Indian companies. To survive against foreign multinationals with bigger and larger resources, Indian companies are actively searching some new formula for survival. Some of them are adopting TQM as one such formula. Some business associations, especially CII, is actively trying to spread TQM in spirit and practice, among the Indian companies.

Total Quality Management (TQM) is a philosophy that aims at perfecting product and service quality to achieve customer satisfaction. The term quality here refers to "fitness for use." This implies that the level of quality that is to be offered or being offered to the consumer, has to be measured in terms of the satisfied wants of customer and not in terms of errors on company standards. The product and service quality has to be measured in terms of what customer wants, not what company offers (i.e., in terms of unfulfilled customer needs and not in terms of errors/defects in company's offering). The inherent objectives achieved by this philosophy are reduced costs, reduced delivery time and attainment of ever increasing market share. The route of achieving the objective of perfect product and service quality is, through continuous improvement that has been adopted from

Japanese experience. This continuous improvement has to be undertaken in every field of organizational activity i.e. from purchase to manufacturing to marketing.

To implement TQM and consequently, to facilitate the continuous improvement of work processes in every field of working in the organization, the whole way in which the organization produces its products and services, has to be changed. These changes have two facets. One facet consists of the changes that affect the people in the organization and the other one consists of new tools like SQC, QFD, Design of experiments. An organization going for implementing TQM, needs to know the experiences of other organizations who have implemented TQM. Industrial case studies play an important role by providing such experiences to the organizations. Since almost every example of success and failure of TQM and accompanied practices available in print, has been taken from foreign companies, Indian companies are bound to come up against certain unpleasant blocks if they do not tailor these practices according to Indian conditions-both social and market. This study attempts to throw light upon the practices, the Indian companies are putting into work, in the process of adopting and implementing TQM, taking a case study of Maruti Udyog Limited

1.2 Research Objective:

To study the process of implementation of TQM in a manufacturing organization.

1.3 Research Questions :

The study will be concerned with :

1. What are the changes that take place in the organization in process of implementing TQM.
2. How do the different constituencies in the organization view those changes which have been made in the process of TQM implementation.

1.2 Organization of the Thesis

The first chapter of the study has given a glimpse of the rationale of the study, research objectives and research questions. The next chapter presents the relevant literature compiled from diverse sources and focus areas for the research. The third chapter contains the research framework and rationale of the methodology that has been used in the study. The next two chapters cover the case study of Maruti Udyog Limited (MUL) and the case

analysis vis-à-vis research questions. The final chapter, chapter 6, gives the findings and learning from the study and also gives suggestions for further research.

LITERATURE SURVEY

2.1 Introduction :

This chapter presents the literature review on TQM and it infers propositions from the search.

2.2 Literature Survey :

Several Quality Experts namely Deming, Juran and Crosby have contributed in establishing the practices to induce continuous improvement in every sphere of organizational functioning. The thesis of these three pioneers in quality field can be collectively summarized in the following way (Powell, 1995):

1. **Committed Leadership:** A near evangelical, unwavering, long term commitment by top managers to the philosophy.
2. **Adoption and Communication of TQM :** Use tools like mission statement, and themes and slogans to disseminate the philosophy.
3. **Close Customer Relations:** Determining both internal and external customer's requirements and meeting those requirement with products or services or both.
4. **Close Supplier Relations:** Work closely and cooperatively with the suppliers (often single sourcing key components), ensuring they provide input that conform to customer's end use requirements.
5. **Benchmarking:** Researching and observing and adopting best industry practices.
6. **Increased Training:** Forms backbone of the efforts regarding TQM. The training emphasize on TQM concepts, team skills, leadership attributes and problem solving tools.
7. **Open Organization:** This means here lean staff, empowered work teams, open horizontal communications and a relaxation in traditional hierarchy.
8. **Employee Empowerment:** Increased employee involvement in design and planning and greater autonomy in decision making.
9. **Zero Defects Mentality:** A system in place to spot defects as they occur rather than through inspection and rework.

10. **Tools in Manufacturing :** Application of JIT, Cellular manufacturing, SPC, and design of experiments etc.
11. **Process Improvement:** Reduced cycle time and waste in all departments through cross departmental process analysis and intradepartmental manufacturing system.
12. **Measurement:** Establish goals and performance measures and strictly follow them. Base decisions on facts and not on intuition or inadequate data.

All these 12 practices facilitate the continuous improvement of work processes in every field of working in the organizations. These practices can be broadly classified into two categories: behavioral and relationship changes and deployment of statistical tools like control charts, design of experiments etc and other tools like Benchmarking, Quality Function Deployment (employed for converting customer demands into features of company offering) The changes with the aim of changing behavior, that have been identified from the literature, have been explained in the following sections .

2.2.1 Commitment of Top Management

Total Quality Management seeks to transform organization into a learning¹ one and improving² one. Committed leadership³ (towards quality initiatives) is primary requirement for TQM performance (Gitlow & Gitlow, 1994). A near-evangelical, unwavering focus, long term commitment (at least 5 years in future) by top managers to TQM philosophy works as a fuel to total quality movement.

Top management³ creates and directs the energy necessary to transform an organization into one which pursues quality in every field of work (all functions⁴ ranging from production to non-production) with zeal. (Gitlow & Gitlow, 1994) There are two sources of this energy-- a. crisis b. vision⁵. It is the top management which decides which to pursue. To create crisis, two methods are followed by leaders--

¹ Learning organization purposely stores the experiences of past and tries to evaluate the new situations in light of stored experiences.

² Incremental as well as breakthrough ones.

³ By top management, it is meant to consider the CEO and first line of managers i.e. functional heads.

⁴ production, quality control, purchase, MIS, finance, marketing.

⁵ A vision is an idea of outlook of the organization in future. It is a realistic picture of what the organization wants to become and what is possible.

a Ask a probing question like "What are the quality requirement of our major products/services demanded by our major users or customers?" The effort in answering the question helps in making managers realize that they are out of touch with customer's needs. If they communicate this question throughout the organization, everybody will soon realize the crisis of not knowing the customer.

b. By doing SWOT analysis --Study the history of the organization throughout its evolution, define its internal strengths and weaknesses in light of its history and find its environmental opportunities and threats. Analyzing all this data lands one in a position to understand the crisis that face the organization. Top management then communicates this information about the real or potential crisis throughout the interdependent system of stakeholders (employees, customers, suppliers, shareholders, owners) to encourage the members to commit to transformation.

If the leaders realize that there is no potential crisis before organization, they take the route of vision to rally the point of quality improvement. (Besterfield et al, 1995) A vision can stimulate leaders and followers both, to expend the energy needed to transform the organization.

When vision becomes deeply shared within the organization, it works as a stimulant to effort needed to achieve the goal created by vision. (Like IBM's SERVICE, Polaroid's INSTANT PHOTOGRAPHY)

(Gitlow & Gitlow, 1994) Deming's system of profound Knowledge⁶ seeks to explain some paradigm shifts for organization success in 21st century. One of the paradigm shifts necessary is "to create a win-win environment, not a win-lose environment". The focus of win-win environment is optimization of all the stakeholders in organization system of interdependent stakeholders. The responsibility of this effort falls on leaders. They should take into cognizance of the fact that they cannot hurt any constituent's (of the organization)

⁶ In his thesis, Dr. Deming presented following principles-

- Appreciation of a system- Realize that a system is a collection of interacting components. Emphasize on optimizing the whole system.
- Theory of variation- Reduce system causes of variation and leave inherent variation.
- Knowledge is not information-But it is an ability to predict the future with risk of failing and explain past events without fail.
- Knowledge of Psychology- Helps managers to understand the correct composition of intrinsic and extrinsic motivation.

interests. The other paradigm shift necessary is "to manage with a long term process and result orientation, not with a short term result-orientation only". This will promote improvement & innovation in the organization processes. Highly capable processes facilitate prediction of future and consequently, a high likelihood of achieving the organization mission. This calls for leaders to devote more of their time to give a direction to the organization and delegate day-to-day decision making authority to capable personnel downwards.

(Besterfield et al, 1995) Total Quality Management requires the leaders to lead by example. There should be no mismatch between leaders' actions and voice otherwise people have a strong tendency to regard any nice declaration from leaders as another rhetoric. For example, if employees of a departmental store see that their vice president is out there talking with the customer, getting their views and translating it into requirements to be filled by the company, they will have an inclination to more closely attend the customer next time.

Similarly, while implementing TQM, a quality council⁷ should be formed by the top management, members of which are all top management people, respective heads of the depts., quality experts and a coordinator etc. The coordinator reports to the CEO. (Besterfield et al, 1995) The functions of Quality Council are many like-

- a. develop core values, mission & vision statement and quality policy statement⁸.
- b. develop strategic plan based on goals(long term) and objectives(short term).
- c. develop a training & education program with an eye on TQM principles and problem solving abilities for all employees.
- d. determine & monitor continuously cost of poor quality⁹.

⁷ To provide an overall drive to quality improvement programme, a quality council is established. Generally the members are CEO, first line of managers, functional heads, quality expert(coordinator/consultant).

⁸ The VISION statement is a declaration of what an organization should look like in future. The MISSION Statement answers the following questions : who are we, who are the customers, what we do and how we do it. It describes the organization's function.

The CORE values of the organization reflect the culture of the organization.

The QUALITY POLICY STATEMENT provides a guide for everyone in the organization as to how they should provide products and service to the customers.

⁹ The value of quality must be based on its ability to contribute to profits. As with cost of production/design/maintenance/sales, costs of poor quality should also be measured. A reduction in it leads to increased profits. Quality costs cross departmental lines by involving manufacturing, planning, purchasing, marketing, service & sales etc.

- e. establish cross functional/departmental teams depending upon task, monitor the progress, provide the resources etc.
- f. improve performance appraisal system with view that intrinsic motivators bring out the best in employees and give the pride of workmanship to employees.

Actually the commitment of CEO and other top people reflects in the actions of quality council.

(Yearout, 1996) According to a survey, in high performing organizations on TQM front, strong, hands-on¹⁰ leadership by the CEO is indeed a critical predictor of success in gaining measurable process improvement. Top management has also to ensure cascading leadership¹¹. They take pains to assure that leadership of improvement initiatives, while driven by CEO, cascades down to levels far below CEO. The role of first line supervisor of the department or the work group level becomes critical to seeing the improvement objectives are constantly pursued and achieved. Another effort needed from leadership side is to align the goals of the employees with those of organization. Employees have to be made to understand the connection between their job function and larger corporate goals. When goals of employees and the organization are aligned, employees take active ownership¹² of their work, acting on their responsibility to continuously improve the way they get the work done.

Workers expect clear direction and guidance from the individuals who are at the helm. So leading does not imply for managers to abdicate the responsibilities of planning, organizing, and controlling. (Bonvillian, 1996) A Measurement by which lower staff traditionally measures the manager's commitment to quality improvement efforts, is manager's ability to successfully allocate sufficient resources to affect quality change. The dissonance between empowering a work force to affect change and supplying necessary resources have much more profound impact on the image of leadership as well as ultimate effectiveness of quality initiatives.

¹⁰ Basically, it calls for managing by wandering around (MBWA) and not sitting in closed door offices.

¹¹ The leadership approaches adopted by top management should cascade down to lower levels upto supervisors and there should be no dissonance between what CEO says and what Supervisors do in day-to-day functioning of the organization.

¹² The employees should regard the processes as their own child. For instilling a feeling like that, employees have to be empowered as far as decisions regarding their own processes are concerned.

The arguments above show that top management role is very important for successful implementation of TQM. Top management has to realize that they have to sell the idea of TQM to the employees. You simply cannot do it by imposing TQM concepts on someone. For being an effective marketer of TQM, CEO has to show involvement to TQM programmes by-

- a. participation in training and education programmes.
- b. delegation of decision making power.
- c. communication with front line employees.
- d. communicating with teams.
- e. communicating with customers

So the first significant aspect of TQM is that,

"TQM requires visible commitment of top management towards quality improvement programme."

2.2.2 Reward process in the Organization

Traditionally, organizations give performance based monetary incentives¹³. (Fox, 1993) They tend to take into consideration only Hygiene Factors in Herzberg's motivation theory (Relation with supervisor, salary, relation with peers, personal life, status, security)¹⁴ or Existence group of needs in ERG theory of Alderfer¹⁵. Total Quality Management wants

¹³ Like in typical manufacturing organization, workers are given bonus based on production targets achieved. In other departments, people are given incentives simply on the basis of subjective judgment of the superiors.

¹⁴ (Robbins, 1995) Motivation-hygiene theory proposed by Herzberg, F. -

Two types of factors- Extrinsic and Intrinsic, determine people's satisfaction and dissatisfaction from jobs. Extrinsic factors such as company policy and administration, supervision, salary, relation with peers, status, security etc. are called **HYGIENE FACTORS**, mismanagement of whom can create dissatisfaction with the job. Intrinsic factors include growth, advancement, responsibility, nature of work, recognition, and achievement etc. proper management of whom will ultimately decide the level of satisfaction from the job.

¹⁵ (Robbins, 1995) There are three groups of core needs: existence, relatedness and growth. The existence group of needs include one's physiological needs like hunger, thirst etc. and safety needs like security & protection from physical and emotional harm. The relatedness group of needs are social needs like affection, belonging, acceptance and friendship etc. and external esteem factors like status, recognition and attention. The growth group of needs are internal esteem factors such as self respect, autonomy, and achievement etc. and self actualization i.e. achieving one's full potential and

employees to actively search for avenues of improvement in his/her work. That means to be thoroughly involved in what you do. For making efforts continue in the organization, efforts need to be positively reinforced by rewards. (Besterfield, 1995) According to some research, immediate and unpredictable rewards/recognition¹⁶ have more impact than the routine bonuses. The recognition by leaders¹⁷ goes a long way in motivating employees. Senior managers must find time to celebrate the success of their organization's quality efforts, by personally participating in award and recognition ceremonies. This activity is an excellent opportunity to reinforce the efforts in the direction of quality improvement. (Robbins, 1995) This reward process tends to take into consideration the motivators in Herzberg's motivation theory (recognition, responsibility, advancement, growth) to increase job satisfaction. They are also compatible with needs of relatedness and growth group in ERG theory of Alderfer. The reward process tends to satisfy the social interaction requirement of individuals (to be satisfied) and the desire for personal development.

(Fox, 1993) Combining ERG theory of Alderfer and Herzberg's motivation theory, it can be inferred that people's actions and aspirations are governed as much by their social needs as by direct economic motives. Unless they are in an economic distress, their social needs will dominate. In particular, people will behave in a way they feel is expected by the group they belong.

The theory above has guided TQM to propose a change in the reward process of the organization. In addition to monetary incentives, reward process should be focused to increase the recognition of the people and their efforts. Awards should be given to individuals who have been able to give even slight improvements and should be widely publicized. (Yearout, 1996) In performance appraisal of the individual, his/her efforts in improving quality of his/her work should also be taken into consideration. They are made to understand link between their jobs and achievement of larger corporate goals. So now the

self fulfillment. Alderfer prescribed that more than one group of needs may be operative at the same time.

¹⁶ In addition to annual/monthly incentive, efforts of the employee should be recognized by arranging public ceremonies or should be rewarded and his effort should be publicized. This will help in reinforcing the spirit of the effort.

¹⁷ (Robbins, 1995) Like annual ceremonies at Mary Kay cosmetics where the CEO rewards the employees for numerous feats achieved by them. Similarly recognition of employee's efforts in quality initiative area/ improvement of the work process by the top management personally, can very much provide the required impetus to the employees.

employees recognize and act on their responsibility to continuously improve their work process.

So the next finding from literature is -

"TQM calls for a change in the reward process of the organization, to focus on the recognition(social) needs of the individual."

2.2.3 Decentralization

(Yearout, 1996) Along with operational excellence , some new criteria like responsiveness to market condition, quality, cost and time characteristics of key business processes, degree of employee commitment to improvement goals, are being used for measuring organization performance. Empowerment¹⁸ goes a long way in generating employee commitment to improvement goals. Empowerment also provides wider latitude¹⁹ to employees, thus increasing the scope of improvement as more and more decisions about the work are taken by the person who performs it. Increased employee involvement in design and planning of the process (on which employee is working) and greater autonomy in decision making are key to TQM performance. (Powell, 1995) The key to TQM performance lies not in TQM tools and techniques like benchmarking and process improvement, but in intangible, behavioral factors like leadership, organization skills and culture.

TQM calls for an unwavering focus on continuously improving the processes. let it be production or service. (Blauw & During, 1990) A good method for focusing on continuous improvement is PDCA (Plan-Do-Check-Action) cycle. Employees should continuously follow PDCA cycle to improve the processes. (Besterfield, 1995) But to maintain the focus, it will be imperative for people to 'own' the process. This in turn calls for empowering the people. If people have control over the processes, they will go for improving the condition/state of the process.

TQM also recognizes close and constant watch on rapidly changing customer requirements and needs to maintain the responsiveness. Organizations need to respond rapidly to

¹⁸ Here empowerment implies the delegation of decision making authority to the person doing the job regarding matters related to his/her work and involvement in decision affecting his/her work like purchase of new material/machine, subordinate recruitment etc.

¹⁹ The employee gets more opportunity

changing conditions at the point where the change is taking place. That means, decision making authority should go downward to the point where marketing and manufacturing can coordinate better and be fast responsive. This is necessary because if the change detected by marketing people is not taken into consideration fast by manufacturing, the marketing effort in detecting the change is wasted. This typically happens if the power to act upon the information lies upward in the organization.

Decentralization²⁰ aims at eliminating this problem. (Robbins, 1990) In addition to fast responsiveness, decentralization provides detailed input to decision making process because high level managers only get filtered information. Moreover, professionals and skilled employees are being more and more valued today, in an era of specialization. They typically want to participate in decision-making about the matters affecting their job. So involving them in decision-making will certainly help in motivating them and it will also make them more accountable to goals set as they have been involved in the goal setting process. Decentralization will provide greater motivation to such employees. Thus it will naturally help the organization in retaining such employees.

(Besterfield, 1995) TQM recognizes training impetus for improvement efforts. It calls for both on-the-job training and classroom inputs depending upon the nature of the job. (Robbins, 1990) Decentralization will increase the opportunities of learning for low level managers and therefore adds to their training which is very necessary to cope up with the varied challenges, organization has to face. This type of on-the-job training is very necessary as the same low level managers will go up the hierarchy to lead the organization in the future.

(Bonvilian, 1996) Along with delegation of decision making authority downwards, employee should be clearly conveyed where the decision making prerogative begins and ends²¹ for the individual. The result of empowerment efforts show that early zealous efforts are normally devoid of the necessary direction and guidance that would have helped employees fully understand their decision-making boundaries.

²⁰ Decentralization refers to the state in which the formal authority to make discretionary choices is, concentrated in levels lower in the organization but of course, the choices available should match the responsibility attached to the respective level. The decision making prerogative should not be constrained by extensive policies laid down from top. But again, close monitoring by top management does not imply centralization.

²¹ The Boundary of decision making should be properly defined.

So where does all the arguments converge? They converge in the form of next findings-

"TQM calls for empowerment of people, i.e., it requires more decentralization of day-to-day decision-making."

2.2.4 Group Activity

A key element for improving quality is to stimulate people to think about their own job in fresh ways, for them to be receptive to changes in working practices and to be encouraged to contribute their knowledge and ideas in cause of quality improvement. (Fox, 1993) Participation techniques like quality circles²² aim at -

- a. removing the barriers to people in doing their job effectively &
 - b. encouraging them to work smarter not harder People's behavior is directed towards goals-
 - a. which they have set themselves or
 - b. which they have accepted freely from others and
 - c. which reflect their own values and desires
- General motivational techniques like pay, security of employment, paid holidays, productivity incentives satisfy only needs that fall in existence group of needs in ERG theory of Alderfer or the needs that are lower in Maslow's hierarchy of needs. Real motivation comes only when in addition to satisfy lower level needs, techniques are employed to satisfy higher needs in Maslow's hierarchy or Motivators in Herzberg's theory. Quality circles are such a technique . Its purpose is not employee satisfaction but problem solving. But inherent in it, is participation and decision making by individuals and also conformance to group behavior, which lead to employee satisfaction.

(Robbins, 1990) As jobs become more complex, management does not know everything the employees do. So participation allows those who know the most, to contribute. Also, interdependence in tasks that employees do today, often requires consultation with people in other departments and work units. This increases the need for cross functional problem

²² Quality circle is group of 8-10 employees and supervisors who have a shared area of responsibility. They meet regularly to discuss quality problems, investigate causes of problems, recommend solutions and take corrective action. They take over responsibility for solving quality problems and they evaluate and generate their own feedback. But management has a final say in deciding about the actions to be taken.

solving teams to resolve the issues. Participation provides intrinsic rewards for employees. It can make their jobs more interesting and meaningful. The arguments presented here suggest the increasing use of groups for conflict resolution, decision-making and quality efforts. People who know best about jobs are the ones who perform them. So they should be thoroughly involved in the decisions regarding their work.

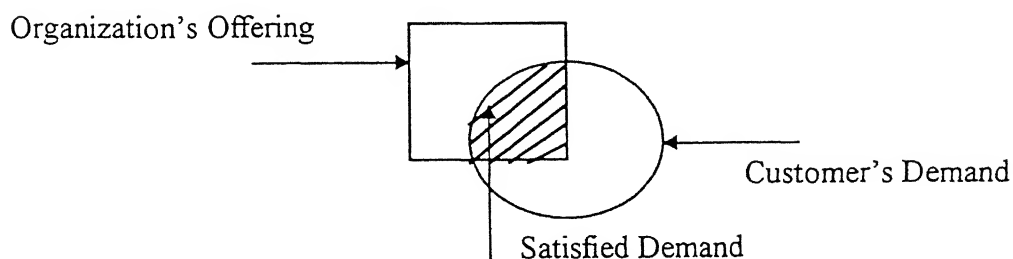
(Peters & Waterman Jr., 1996) It is also suggested that participation should be voluntary. In HP, whenever a problem area is identified, nominations are invited for problem solving team. Voluntary participation generates more commitment, more ownership and more motivation. Firms are unlikely to adopt TQM practices in short term if existing employees lack team orientation and do not accept training well. Empowered work teams are necessary for high performance on TQM front (Georges & Ronne, 1996) Teams are regarded as key learning units in the organization as they provide "communities of commitment" in which free and creative exploration of complex and subtle issues is possible. They absorb and produce novel information, i.e., innovative ideas. They are horizontal information system and they enter into exchange with environment faster than any other known human system. So the teams are necessary if we look at TQM concept of close link with environment.

so the discussion leads to the next finding that,

“TQM identifies group activity(like quality circles and cross-functional teams) as major source of improvement.”

2.2.5 Customer - Supplier Chain

Quality means meeting/exceeding customer's expectations. Accordingly to Dr. Deming, quality also means anticipating the future needs of the customers. Customer satisfaction must be the primary goal of the organization. (Besterfield, 1995) Customer satisfaction can be represented by Teboul model-



Teboul Model

Part of square within the circle is satisfying and part of square outside circle is unnecessary. Total satisfaction is achieved when circle is superimposed by the square. A very important question is -"who is the customer?" Customer of an organization is anyone who purchases/patronizes for the purpose of receiving products/services. Every employee if he knows the effect of his work on satisfaction of external customer, will be more sensitive to external customer. It has been identified that by viewing every department in organization as internal customer of the preceding department, one tries to meet the expectations of the next person and so form a chain of efforts of internal customer satisfaction which leads to satisfaction of external customer.

So where does the above theory lead to? It shows the necessity of close customer contact to improve responsiveness of the organization. In the competitive world, organization need to be responsive enough to detect its customer's needs, fulfilling it and finding out new customers.

The organization will be required to-

1. constantly offer improvement in its existing product, guided by customer expectations,
2. retain the existing market share and increase it by keeping tab on emerging markets and customers,
3. finding new uses of the existing products,
4. have a relationship of trust, confidence and loyalty with the customer,
5. aware of new developments in technology and incorporation of same in its products,
6. beware of the competitor's offering and
7. constantly reduce errors and defects. The aim of these efforts is to increase responsiveness, to any situation in market field.

(Laura, 1996) Loyal customers provide high profit, repeat business, high market share and referrals. Loyal customers are continuous source of income which leads to higher profits. Getting customers involved in design and development of a product also enrich a lot more than customer satisfaction requirement. Around 80% of the successful new products and services come from customer ideas. So one should ask customers about their liking while searching for a product and their wants still unsatisfied. Ford Motor Co., in building its 1994

Mustang, invited 200 loyal customers to be a part of its design team. The total result was that Mustang was in market in 25% less time and 30% fewer dollars spent on any comparable development programme in Ford's recent history. So pains should always be taken to build customer loyalty. Frequent buyer programmes reward people for doing business with the company and show them that they are valued customers.

All the arguments present a strong need for keeping a tab on customer and Markets. (Yearout, 1996) Top performing organization on TQM front, not only pay close attention to capturing customer satisfaction data to guide quality improvement effort but also to improve , redesign or otherwise change the process.

(Besterfield, 1995) Similarly, one of the keys to obtain high quality products and services is to work with suppliers in a partnering atmosphere to achieve same quality level as attained within the organization. Organization and the supplier have the same goal- to satisfy the end user. The better the supplier's quality, the better its long term position because organization will be able to strive for new goals of improvement in quality. Because both organization and supplier have limited resources, they must work together as partners to maximize their return on investment.

All this theory calls for viewing external supplier as partner of the organization and behave with them as an internal customer behaves with internal supplier. To solve quality problems within the organization, it is imperative for internal customer to work closely with internal suppliers to coordinate and direct their efforts to a single goal- to build quality in the product. The same concept applies with external supplier and the organization concerned also. The only reason why internal supplier and internal customer, generally are able to work out a solution to their quality problems, is being a single internal supplier for an internal customer for requirement of one item, and so better coordination. Similar should be the situation between external supplier and the organization. There should be single sourcing for one item. That results in long term contract and a partnering relation with a guaranteed future volume for the supplier and then the supplier can direct his resources to quality improvement efforts. For the organization, the advantages are reduced cost, complete accountability, supplier loyalty, partnering and a better end product with less variability.

With increasing emphasis on JIT application, it is becoming more and more imperative for the organization to view supplier as part of company-wide supplier-customer chain. When

one views its internal supplier same as external supplier, one tend to become more efficient in providing the product or service as supplier and when one views its external supplier same as one's internal supplier, it is more likely that the external supplier will be sharing the organization's vision towards business. Then one can better direct the efforts of quality improvement.

So all the above discussion leads to the last finding that,

“TQM calls for viewing the organization as a customer/supplier chain starting with external supplier and ending with external customer with middle links being internal customer/ supplier.”

RESEARCH METHODOLOGY

3.1 Introduction :

This chapter gives a brief description of various types of research methods, their merits and demerits. Finally the case study method and its suitability in the present study has been discussed.

3.2 Research Methodology :

The study has adopted qualitative approach. Among various methods for doing qualitative research, Case Study method has been selected. The following Sections explain the rationale of adopting Case Study method for the research.

3.2.1 Choice of Method :

In the literature, it is indicated that studies in social science have following characteristics:

- Events take place over a long period of time.
- Causal events are inter-related driving one another, i.e., facts may be embedded in their historical perspective. Identifying, isolating and characterizing the casual events is a difficult task.
- Explanations are probabilistic.

Following types of research strategies are used by the social scientists (Yin, 1984) :

- Experimental investigations,
- Survey research method based on questionnaire and interviews,
- Manipulation of secondary data,
- Historical studies, and
- Case studies

The above research strategies are different ways of collecting and analyzing empirical evidence(Yin, 1984). Each strategies has its own advantages and disadvantages. In general case studies are preferred strategy when "how" or "why" questions are posed, when investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context. Many social scientists have now started talking

about methodological triangulations (i.e. combination of methods) and making research process a play (i.e. going beyond methods).

3.2.1.1 When to Use Each Strategy :

Selection of a research strategy largely depends upon following factors :

- [a] The type of research question posed.
- [b] The extent of control in investigator has over actual behavior of events.
- [c] The degree of focus on contemporary as opposed to historical events.

The first and most important condition for differentiating among various research strategies is to identify the type of research question being asked. In general "what" questions may be answered better through exploratory studies (any strategy can be used) or prevalence surveys (surveys or analysis of archival records would be favored). "How" and "why" questions are likely to be answered better, through the use of case studies, experiments, or histories.

In support of case study method, Burgess[1927] mentioned "How can attitude, the basic subject matter of human nature and society, be stated numerically? How can so called intangible facts of life, its qualitative aspects, be apprehended? What figure will measure qualities of personality like charm, loyalty, and leadership?"

We can identify some situations in which all research strategies might be relevant (such as exploratory research), and other situations in which two strategies might be considered equally attractive (such as "how" and "why"). We can also use more than one strategy in any given study (for example a survey within a case study). To this extent the various strategies are not mutually exclusive. But we can also identify some situations in which a specific strategy has some distinct advantages over others. One may say that the case study method is most suitable when "how" and "why" questions are posed and little or no control over the events can be achieved.

3.2.1.2 Strategy Used in Present Research :

The present research has attempted to understand the process of implementation of TQM. The focus areas identified, has been given in Chapter 2. The Study has also covered the perceptions of different constituencies in the organization viz., top management, middle management, supervisors, workers and union. The hindering and facilitating factors with

respect to each of these changes has been elicited. It was also intended to study the quality programme of the organization in the context of historical evolution of the organization and its product market. Thus the study was to heavily rely upon the memory and the experiences of the people.

Viewing the nature of the these questions and areas intended to be explored, it was felt that case study method would be most appropriate method to conduct the study

3.2.2 Selection of Case :

The unit of analysis in the research is the is the organization taken up as case. The criteria on which primary search for the cases was done are as follows :

1. The firm should be a manufacturing organization,
2. The firm should have a TQM programme, and
3. The TQM programme in the firm, should be at least 4-5 years old (from literature, it has been identified that an organization normally takes more than 5 years to show results (either positive or negative) of TQM programme).

On these criteria, a sample of firms was selected among Indian organizations and approval from their management was sought. Due to time constraint, only one organization, Maruti Udyog limited, could be studied.

3.2.3 Data Collection :

Data collection has been done through interviews and by study of documents. Documents, which have been used, references have been given in the case. In case of documents, main concern was company's policy regarding those issues.

For interview purpose, the study has tried to take into account the views of different constituents of the organization. For this purpose, the organization has been divided into four constituencies :

1. Top Management (CEO and Functional Heads and managerial levels upto DDVM level - refer organization chart in APPENDIX-E)
2. Middle Managers (DPMs and other Managers)
3. Supervisors and Executives
4. Workers (Technicians)

MUL being a very big organization having more than 45 shops and departments, it is not possible to cover each constituency in each department. For the constituencies, the departments covered have been given in the following table :

DEPARTMENTS	TOP MANAGEMENT	MIDDLE MANAGEMENT	SUPERVISORS & EXECUTIVES	WORKERS
M/c Shop	√	√	√	√
EA Shop	√	√	√	√
Assy Shop (Plant 1& Plant2)	√	√		
Vendor Devel. - (1,2,3,4,6)		√		
Vehicle Inspection (plant 1)		√		
Parts Inspect.-(1,3)		√		
PKC	√	√		
Service Department		√	√	
Marketing		√		
QA Department		√		
QS Department	√	√		

A checklist of questions was prepared on the basis of available literature (Chapter - 2) and is given in APPENDIX - A. A prior appointment from the personnel in various departments, was taken before approaching them for interviewing. Each interview was unstructured, based on the checklist of the questions prepared. In addition to documents and interviews, data were also collected by direct observation of the shop floor and employee behavior. In certain cases, it was felt to have second interview after preparing the first draft of the case based on the first interview. Also in case of certain areas, the researcher had to face considerable problems in eliciting information from people. It was especially in case of the topics like Performance Appraisal & Reward System, which are treated as taboo topics in the organization.

3.2.4 Data Analysis :

The case has been described with a view to bring out the different aspects of quality movement and more specifically TQM implementation in the organization. The data has been analyzed according to following steps :

1. Drawing chronological progress of the organization on TQM front,
2. Constituent analysis,
3. Evaluation of the organization's steps, and
4. Explaining differences between the opinions of different constituents.

THE CASE - MARUTI UDYOG LIMITED

4.1 The Company:

MUL was established as a PSU in 1981 with the following stated objectives :

- Modernization of Indian Automobile Industry
- Production of fuel efficient vehicles to conserve scarce resources and
- Production of large number of motor vehicles which was necessary for economic growth.

A license and a Joint Venture agreement was signed with Suzuki Motor Company of Japan, in 1982 by which Suzuki subscribed 26% share of the equity, with an option to increase it to 40%. Suzuki exercised this option in 1987. After government restriction on the equity of foreign companies in a JV was lifted in 1992, Suzuki further increased its equity to 50% in 1992, converting Maruti Udyog Ltd. into non-government company making it first government company to do so. MUL's total equity is Rs 1322.92 million. The present equity structure of MUL is as follows : Suzuki - 50%, Government - 49.74 %, Employees of MUL - 0.26%. The production capacity of the company is 2,50,000 vehicles per annum. Its plan is to increase the capacity by 1,00,000 cars by 1997. The models of the company and their introduction years are as follows :

Maruti 800 (796 cc)	-	Dec. '83
Omni (796 cc)	-	Nov. '84
Gypsy (970 cc, 4WD off-road Vehicle)-		Dec. '85
Maruti 800 (796 cc, New Model)	-	Apr. '86
Maruti 1000 (970 cc, 3 Box Car)	-	Oct. '90
Zen (993 cc)	-	Oct. '93
Esteem 1.3 L(1298cc, 3 box Car)LX -		Nov. '94
Esteem 1.3 L(1298cc, 3 box Car)VX -		Nov. '95
Esteem 1.3 L(1298cc, 3 box Car)AX -		June '96
Zen Automatic (993cc)	-	Oct. '96
Gypsy King (1298cc,4WD off-road Vehicle)-		Nov.'96

Right from the beginning, MUL has tried to increase the indigenisation level of its models and today the situation is that in all its models, it is greater than 80%. Table 4.1A tells about the indigenisation levels of its various models. MUL gives especial emphasis on increasing the productivity of employees. The Tables 4.1B and 4.1C shows the productivity trend of the organization .

Model	Indigenisation Level (%)
Maruti 800	95
Omni	95
Gypsy	81.86
Maruti 1000	91.86
Zen	84.88
Esteem	89.31

Table 4.1A Indigenisation in MUL's Models

VEHICLES PRODUCED PER EMPLOYEE	
YEAR	VEHICLES PRODUCED PER EMPLOYEE
92-93	29
93-94	35
94-94	38
95-96	46

Table 4.1B Productivity Trend (i)

VALUE ADDED PER EMPLOYEE(Rs. MILLION)	
YEAR	VALUE ADDED
92-93	0.56
93-94	0.90
94-94	1.19
95-96	1.95

Table 4.1C Productivity Trend (ii)

To meet the demand of the customers and to provide them excellent after sales service, MUL has developed an extensive Marketing and After-Sales Service network . In this network, there are 96 dealers, 144 sales outlets (covering 86 cities), 173 dealer Workshops (covering 92 cities), and 755 MASSes(Maruti Authorized Service Stations) (covering 376 cities in India).

EXPORT MARKETS : Till now MUL has exported over 1.25 lakhs vehicles to more than 100 countries. 75% of these exports have went to Europe. The major exports have been

done to Australia, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Yugoslavia, Chile, Nepal, and Sri Lanka.

4.1.1 Business Performance :

Average daily production of MUL has increased from 418 vehicles in 1991-92 to 961 in 1995-96. This year it is expected to cross 1100 mark. The production capacity of MUL is 250,000 vehicles per year. But it has been exceeding its production capacity in the last few years. The production of MUL and its sales in Domestic Market and exports are given in Table 4.1.1 A.

YEAR	PRODUCTION(no. of Vehicles)	DOMESTIC SALES (no. of Vehicles)	EXPORTS(no. of vehicles)	TOTAL SALES (no of Vehicles)
86-87	80150	82206	102	82308
87-88	92360	93320	713	94033
88-89	105547	104184	1408	105592
89-90	117521	112112	5223	117335
90-91	123083	115394	4908	120302
91-92	121167	99517	22921	122438
92-93	128138	112309	14566	126875
93-94	158109	142945	17187	160132
94-94	206330	185125	20862	205897
95-96	277776	249308	26103	275411

Table 4.1.1A Production and Sales of MUL

Maruti has virtual monopoly in the small car segment. Except for the first 2 years, Maruti has been a market leader in the passenger car segment. The data is shown in Table 4.1.1B¹ :

Year	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
Mkt. Share %	1.9	29.1	46.8	61.6	59.7	59.0	60.1	61.6	65.7	71.7	70.4	73.7	76.6

Table 4.1.1B Trend in Market Share of MUL

Financially also the company has been healthy. Table 4.1.1C scrutinizes company performance.

¹ Taken from Company Documents

4.2 Market & Environment :

The car market in India is growing at a rate of 25 % per year¹ and every major auto manufacturer in the world has either come to India and set up its shop or announced its plan to do so. The car market can be divided in two broad groups, namely the Passenger car market and the Sports car market. Due to the fast expanding middle class and its ever increasing purchasing power, the former is exploding. The Rs 10,000 crore passenger car market is increasing at rate of 30% per year². The Indian passenger car market is divided into five segments² which are given in Table 4.2A.

MEASURE	1992-93	93-94	94-95	95-96
PBT (Rs. million)	210	140	830	3090
PBT/ Turnover	1.7	4.89	8.51	10.1
Long Term Debt /Equity	1.26	1.04	0.59	0.31
EPS	2.9	6.5	18.7	30.9
PAT/Net worth (%)	11.02	20.8	38.76	40.1
Net Worth(Rs billion)	3.42	4.13	6.38	10.8
Dividend(%)	6	10	15	20
Return on Capital Employed(%)	8.25	19.1	28.8	50.2
FE Earnings (Rs. billion)	1.66	2.16	3.07	4.71

Table 4.1.1C Financial Performance of MUL

The sub 1000 cc category commands 60 % of this passenger car market³ and it is the segment where MUL rules the roost. Perhaps, that is why as many as 21 companies all over the world have announced plans for making a small car in India. If DCM Daewoo's plans stay on schedule, the first real competitor to MUL's 800cc will be on the road by early next year. TICO might be the first small car with an engine capacity ranging between 800-900 cc, 3 cylinder in line, with higher looks, that will take both ZEN and MARUTI 800 head on.

From the Table 4.2A, it can be seen that a maximum no. of auto majors have entered the C-segment of the market where the major battle is being fought between DCM Daewoo's CIELO, MUL's ESTEEM, GM's OPEL ASTRA and Ford-Mahindra's FORD ESCORT.

² Auto India, December 1996, pp 56-57.

³ Business Today, Sept. 22 - Oct. 6, 1996, pp. 80-91

Till now, the ESTEEM has commanded 54% of this segment, with CIELO catching up fast with 36%. Daewoo entered this market with a bang - highly aggressive sales push and innovative marketing strategy. The CIELO with its aggressive shark like looks and highly advanced features like tachometer, power windows, power steering, central locking, rear window defroster, electronic fuel flap and automatic transmission system has become more attractive than Esteem and OPEL ASTRA and is fast catching up with the leader ESTEEM as far as C-segment is concerned. Daewoo is the first company in India to introduce the new technologies like power windows and multi-point electronic fuel injection in lower end of premium car segment. Multi point electronic fuel injection is bound to catch up in future in an era of increased fuel saving consciousness and want of high power as this injection system facilitates better power output and greater fuel economy and is more eco-friendly, due to reduced emissions. To catch up with the CIELO, MUL has also introduced the upgraded version of ESTEEM.

SEGMENT	RULING MODEL(S)	OTHER MODELS	PROPOSED MODELS
A(<1000cc, 3 cylinder)	Maruti 800		Daewoo Tico, Daihatsu Mira, Mitsubishi Colt, Nissan Micra
B (<1000cc, 4 cylinder)	Maruti Zen	Fiat Uno	Opel Corsa, Ford Fiesta, Fiat Palio, Renault Clio, Renault Twingo, Chrysler Neon, Peugeot 106
C (>1000 cc, Price 5 lakhs-8 Lakh)	Esteem	CIELO, Ford Escort, Maruti 1000, Opel ASTRA, Peugeot 309	Mitsubishi Lancer, Hyundai Accent, Skoda Felicia
D(>1000 cc, Price 10 lakhs-20 lakhs)	Rovers Montego		Daewoo Espero, Ford Mondeo, Opel Vectra, Skoda Octavia
E(>1000 cc, Price >20 lakhs)	Mercedes-Benz E class		BMW 5 Series, Audi A6

Table 4.2A Segments in Passenger Car Market in India

War has also been on, in providing servicing facilities. To compete with the extensive Dealer & Service Network of MUL, other companies in the fray are using innovative service features. For example, DCM Daewoo launched mobile garages to provide prompt and ready assistance in the event of breakdown. This was promptly matched by MUL also. OPEL ASTRA has launched its exclusive OPEL club whose members get preferences and discounts on hotels and holiday resorts etc.

With sales of only 1300 MERCEDES-BENZ in 1996, the top end of market accounts for just 0.35% market share. Also with the C-segment of the market virtually saturated with players, car manufacturers are now looking at Lower B-segment. This is evident from the enthusiastic response to MUL's ZEN and Fiat's UNO.

Realizing the potential of A-segment and B-segment, as many as 21 auto manufacturers have either come to India or have announced their plans to do so. Since this is the main foothold of MUL, the future scenario in this segment can be interesting. A detailed picture has been drawn in APPENDIX-B (War in Small Car Market). Since, still the customer in this country has not been able to get car on demand, so it will be interesting to see in future, which of these players catch the fancy of customer.

4.2.1 Environment :

Till 1982 there was, virtually, duopoly of two manufacturers of passenger cars in India namely Hindustan Motors and Premier Automobiles Ltd. Introduction of MUL's 800 cc model revolutionized Indian car market with its comfort, fuel economy and modern looks. Due to virtual monopoly in small car segment, its total share of car market was more than 70 % in the passenger car segment. The situation in the last 5 years has drastically changed the Indian car market. Prior to 1991, only MUL, Hindustan Motors and Premier Automobiles Ltd. were manufacturing cars in India. This era has witnessed a virtual change in perception about car from being a luxury item to a necessary item. The Japanese collaboration in MUL and Korean Collaboration in DCM Daewoo has given the Indian Auto Industry an injection of capital that allowed it to update its model range for domestic market and also to commence exports. Since the start of economic liberalization in 1991, India has become a key market for world auto manufacturers. Prior to June 1993, Indian authorities strictly controlled the investment of foreign auto manufacturers in automotive sector through production licenses and tax regimes. Also the tax regime was such that it was to help MUL in which government had Majority stake. In that condition, MUL flourished fully. Prior to 1989, cars of less than one litre capacity were taxed at lower rate than others to favor MUL as it was producing only MARUTI 800 model of 800 cc. Also excise duty structure greatly affects the car market. In 1989 it was 30% on passenger cars which was increased to 66% in 1991. After economic liberalization began certain drastic changes were announced. Now non-Indian companies could hold majority stake in Joint Ventures(JV).

Government diluted its majority stake in MUL upto 50%, giving more space to Suzuki to play. Excise duty was reduced to 55% in 1992 and further to 40 % in 1993⁴. Also after 1989, government stopped differentiating in duty on cars based on their engine capacity. Now more than 10 car manufacturer are there in India manufacturing at present. The new entrants are entering with strong financial background. Foreign Majors are raising their stake in JVs with Indian Companies, to inject massive funds in setup as their Indian partners have not been able to match their financial strength. Daewoo has raised its stake in DCM Daewoo from 50% to 75% and is planning to invest more than \$1 bn in production facilities. According to an estimate, there are more than five million cars on Indian roads. By year 2000, the demand is expected to be around 800,000 cars per year⁵. With growth in car production, component industry is also booming. In 1994-95 itself, more than \$ 1.1 bn were invested and world leaders in auto components like Delphi, T&N Plc. etc. are setting up shops in India as their world customers have setup manufacturing bases in India. The issues that are affecting the car industry today are in fact infrastructural bottlenecks like

- chaotic state of roads,
- fuel prices and other factors like still low purchasing power of majority of Indian population. The data for the AUTOMOBILE market in India is given in the Table 2.1 A⁶

	1991-92	92-93	93-94	94-95	95-96
PASSENGER CAR (nos.)					
SALES	167,244	164,819	210,672	265,612	344,300
PRODUCTIO N	166,383	163,100	209,695	264,007	345,800

Table 4.2.1A Production & Sales of Passenger Cars in India

The country is rich in resources, especially its people and has established itself in a number of areas like computer software and management. The rising aspirations of people in the country will ensure the slow but gradual rise in India's wealth. It is also developing as consumer driven economy eager to purchase consumable and luxury goods. The middle class of India has fostered the growth in the demand for the automobiles and the industry has moved on quickly to introduce vehicles which are either current or very recent models

⁴ Taken from the report of MIRA's (Motor industry Research Association) report, 1996

⁵ Auto India, December 1996, pp.56-57

⁶ CMIE - India's Industrial Sector, January 1996, pp. 309-311.

to satisfy local demands. The key to success will lie in designing and manufacturing, excellent after sales service, competitive pricing and innovative styling & features. The product will have to suit the Indian roads, Indian culture and the mind set of masses. The car which has higher ground clearance to take on the potholes, large enough boot space for luggage, good engine which can run smoothly on highways, trendy trimmings and easy availability of spare parts and has a good equation of value for money, is bound to be a winner. The real winner though will be the customer who will have a lot of options to choose and can match his counterparts the world over in terms of availability of models and price competitiveness.

4.2.2 Competitors :

4.2.2.1 DCM Daewoo Motor Ltd. :

A JV between DCM Ltd and Korean auto major Daewoo, it was established in 1994 with Daewoo picking a 51% stake in JV between DCM and Toyota with majority of shares being off loaded by Toyota, in favor of Daewoo. Its first car - CIELO has been in premium segment and it is the first car to present real challenge to MUL in this segment.

4.2.2.2 Hindustan Motors :

It was incorporated in 1942. Its production facilities are at Calcutta. Till MUL's entry, it was market leader in passenger car market but now it is very distant in the list. To stay in the market, it has gone into a number of collaborations.

4.2.2.3 Mahindra-Ford :

Rs. 2782 Crore Mahindra & Mahindra (M&M) is an established name in utility vehicles market and off-road vehicles named Jeep. \$ 168.83 bn Ford Motor Corp. of US has established a 50:50 JV with M&M christened as Mahindra-Ford Motor Ltd. It has started its production only last year.

4.2.2.4 Premier Automobiles Ltd. :

It is another old war-horse of Indian car market. It was established in 1944. It is also going for JVs with foreign auto majors to stay in the competition.

The detailed information about above competitors of MUL (who can be regarded as the most formidable ones), has been given in APPENDIX-C. Information about some manufacturers who are either planning to introduce their models in the country or have not completed their first year of production or who are operating at a small scale, has been given in APPENDIX-D.

Manufacturer	1991-92	92-93	93-94	94-95	95-96
DCM Daewoo	-	-	-	NA	NA
Hindustan Motors		25704	25147	26,115	27,720
PAL	21100	21000	26000	27,807	31,362

Table 4.2.2A Production & Sales of Major Competitors

4.3 Quality Movement at MUL :

The origin of the quality movement has to be traced back to the period when Suzuki was chosen to be technological partner by Government of India and Suzuki subscribed 26% of MUL equity. The management was keen to have not only SMC's technology in production, but also the practices in SMC facility in Japan like Quality Circles, *Kaizens*⁷ etc. The aim was to achieve the same quality and productivity standard as was in SMC's facility in Japan. As in case of other things like manufacturing procedures, choice of equipment etc., MUL was guided by Suzuki in areas of systems for vendor development and quality assurance. At the time of the beginning of production in December 1983, majority of the components came from Suzuki. Now in almost all the models the indigenisation level is greater or equal to 80%. In achieving the high indigenisation level, it was imperative to train and retrain the people who operated and maintained the operations and equipment. So from starting itself, training was identified as an important element in assurance of quality¹.

With the start of production, MUL's aim was to absorb the technology. So, the main emphasis was given on supervisors' and engineers' training about the processes and equipments. At that time, ON-LINE PROCESS CONTROL and PRODUCT INSPECTION were the first elements in area of quality control of vehicles being produced.

ON-LINE PROCESS CONTROL : In each shop, a quality coordinator was appointed from executives' rank who had the responsibility of assuring that the process in the shop operated within specifications.

⁷ Company's Documents.

PRODUCT INSPECTION : In each shop, operators were trained to inspect the quality of their produce for certain parameters plus certain inspectors were also trained to inspect the quality of product with respect to certain other parameters. Depending upon criticality of specifications, sampling or 100% inspection was done.

Around 1985, in the words of a senior manger⁸, “we and SMC felt that to institute the process of search of avenue for improvement in quality of the product and for that in daily work methods, we will have to work from the beginning of the organization itself. So MUL started Suggestion Schemes.”

4.3.1 Suggestion Scheme :

Almost every manager and asst. managers, when asked about the most important elements of the quality movement, named Quality Circles, Suggestion Scheme and *Kaizen*. These are the backbones of quality movement in MUL. While starting suggestion scheme in the organization, employees were asked to give suggestions about their work methods. To encourage employees to give suggestions, a token award of Rs. 2 per suggestion was being given. Initially, the thrust of the scheme was production area. At that time, suggestions ranged from ideas about work improvement to personal grievances. As DPM-Assembly Shop told the researcher, “ After analyzing certain suggestions, we found that people were giving personal complaints and their solutions as suggestions. So we hammered down the points through supervisors(who had the primary responsibility of getting suggestions implemented) that suggestions should be related to work of the person and not to the work of any other person or to personal complaints. We told that you know the best about what you do. So you give suggestions only about your work. Also, the implementation rate of suggestions was very low. As people had the responsibility of only giving suggestions and responsibility for implementing those suggestions was on a separate group of people, the implementation rate of the suggestions was as low as 30%. So it was stipulated that any person giving suggestion will report it only after getting it implemented either himself or with the help of *Kaizen* Workshop.” A separate *Kaizen* Work-shop was set up in each production shop which had the responsibility of only helping the person who gave a suggestion in implementing it⁹. Also a condition was stipulated for giving awards that they

⁸ Interview with the Senior Manager in Assembly Shop.

⁹ As told by the DPM-PKC.

would be given for only those suggestions which have been implemented. To instill a competitive feeling among fellow employees, a change was done in the award system from giving token award (to all the implemented suggestion) to best screened suggestions which have been implemented. As DPM-Establishment & Time Office put it, the aim was to institute the practice of giving suggestions and so award system was changed continuously depending upon our perception of progress in SS institutionalization. From token award of RS 2 per suggestions implemented in each department on the basis of ease of operation and then to present system of evaluation. Now the implemented suggestions are evaluated on 3 factors

1. Cost Saving (per annum or one time),
2. Ingenuity of Suggestion, and
3. Applicability. The marking criteria for all the three is given in Table 4.3.1 A.

On the basis of criteria listed in Table 4.3.1A, the suggestions are given the awards details of which are given in the Table 4.3.1B. Once every year, each DPM grades all the suggestions in his department to choose the best three suggestion. These three best suggestions from each department of the organization, are then evaluated for choosing 3 best suggestions on the plant level. After that, the best suggestions from the organization are sent to “National Level Competition on Suggestion Schemes”. For the last 2 years, MUL has been winning there first prize jointly with some other organizations. Earlier those persons who gave the best three suggestion, were being provided with certifications also (Gold, Silver and Bronze Colored) in addition to monetary awards, but it has been discontinued for the last two years. Also, as is evident from Table 4.3.1 A, it can be seen that cost cutting gets maximum weightage. Also in Table 4.4.3.1A (Performance Evaluation of Levels L₁ - L₇), Cost consciousness has got 10 % weightage. In that way, performance in Suggestion Schemes is also linked to performance evaluation and then to promotions and career growth.

Table 4.3.10B shows the no. of suggestions implemented and cost savings due to them. Earlier no target etc. was fixed for number of suggestions to be given but around 1988, a norm of 7 suggestions per person per year was fixed as norm in production areas. After that it was further increased to 12 and also non - production areas were included. Target does not imply any punitive measure in case of not reaching the target but as DPM-Establishment & Time Office put it, “ It is used as a measure to infer about manager’s capability to encourage his/her people to think about their work and its surrounding.” In starting days,

targets were fixed more or less arbitrarily. From 1990, MUL started working out targets based on previous year's performance like this year's target i.e. for 1996-97, it is 7.5 suggestions per person per year for production areas and 5 per person per year for non production areas. When asked about rationale for lower targets for non - production areas, DPM-PKC replied that this was based on last year's actual figures. Targets, in words of DPM-PKC, help the organization in focusing the efforts of the people towards improving their work areas. When asked about implication of target on performance evaluation, a worker of M/C shop replied that "it simply helps us in knowing what management wants, although it does not affect much in our efforts to improve our working. We have got it in our habit to give suggestions and get it implemented."

SUGGESTION MERIT EVALUATION STANDARD						
S No	ITEMS TO BE EVALUATED	MERIT LEVEL (A)	MERIT LEVEL (B)	MERIT LEVEL (C)	MERIT LEVEL (D)	MERIT LEVEL (E)
01	COST SAVING (Per annum/one time) (This also includes suggestions where cost saving is difficult to calculate. In such cases, approximate cost saving may be indicated)	Rs. 3,00,000 and above (80 marks)	Rs. 1,00,000 and above (60 marks)	Rs. 50,000 and above (40 marks)	Rs. 10,000 and above (20 marks)	Below Rs. 10,000 (10 marks)
02	INGENUITY OF SUGGESTIONS	The situation or problem has been thoroughly studied and the improvement devised is excellent. (20 marks)	Idea conceived is novel and the improvement devised is good. (15 marks)	Improvement devised is fair. (10 marks)	Improvement devised is insignificant. (5 marks)	
03	APPLICABILITY	It can be applied all over the plant/company. (20 marks)	It can be applied in other works/processes. (15 marks)	It can be applied in similar works/processes. (10 marks)	It can be applied only in the suggestor's own work/processes. (5 marks)	

Table 4.3.1A : Marking Criteria for Suggestions

4.3.2 Quality Circles:

In words of DPM (PKC - Productivity, *Kaizen* and Cost Cutting), after start of suggestion scheme, it was felt and also conveyed to the people that for individual suggestions there is a limit regarding areas affected by them. Also, to bring around improvement in a shared work

area, all the persons of that area have to participate in the improvement efforts as it can be brought only by collective efforts of all the employees. In group interactions, a wide range of ideas are produced due to interaction of a number of people from the same work place. So in 1985, in production area, 7 QCs were established in different shops by clubbing 14 -15 people under one supervisor. These supervisors were trained in QC activity either by MUL personnel trained in Japan at Suzuki's plant or by Suzuki's personnel based at MUL plant in Gurgaon. From that stage, MUL has reached at a stage now where there are 62 QCs in only Assembly Shop-I. For solving the problem of releasing personnel for doing QC, it was

REWARD FOR SUGGESTIONS			
REWARD CLASSIFICATION	MARKS(ADDED FROM THE TABLE 4.3.1 A)	REWARD(RS)	SANCTIONING AUTHORITY
SPECIAL REWARD ¹⁰	Re-evaluation of Grade - I suggestions	Upto RS. 3000/-	The re-evaluation is to be done by the Divisional Manager concerned. Approving authority is JMD (P&P)
GRADE 1	Min. 100 marks	RS 1500/-	Divisional Manager
GRADE 2	Min. 80 marks	RS. 800/-	Divisional Manager
GRADE 3	Min. 70 marks	RS. 600/-	DPM
GRADE 4	Min. 70 marks	RS. 400/-	DPM
GRADE 5	Min. 70 marks	RS. 100/-	DPM
GRADE 6	Min. 70 marks	RS. 50/-	DPM
OTHERS	Below 30 marks	RS. 20/-	DPM
TOKEN AWARD	Suggestion which is good but not feasible.	RS. 10/-	DPM

Table 4.3.1B : Reward for Suggestions

decided to stop the production line once every month on first Wednesday of the month. Now there are total 464 QCs in the whole plant including both production as well as non-production areas. At present, there are normally 6-7 members in one QC under the leadership of line I/C of the respective line or supervisor of a particular area in the production shop. Normally the number of members in a QC is deliberately kept at less than

¹⁰ Grade - I suggestions for which a reward of Rs. 1500 has been paid, will be taken up for re-evaluation after a period of 3 months from the date of implementation. As per the reward systems, benefit claimed in the suggestion form shall be confirmed by the DPM concerned. After confirmation, DVM concerned will evaluate the suggestion for special award and propose reward amount. Reward is payable after approval of the same by JMD(P&P).

9. When asked about the significance of this number, a manager in Assembly Shop¹¹ actively involved in the Quality Circle movement, quipped that, from Japanese experience and from literature on QCs and team dynamics, it has been proved that 7-8 is the optimum number of members in a QC for effective functioning of the QC. Also, generally in one area in MUL, not more than 10 technicians are there.

In non production areas like Quality Systems, Vendor Development, Information Technology etc., where there are no technicians and supervisors, generally all the executives of the department bearing shared work responsibility, constitute a QC under the leadership of the manager or DPM of that department.

4.3.2.1 Participation in QC :

By virtue of it being held in time of stoppage of line for this purpose only, on first Wednesday of the month, participation in QC is compulsory although almost every manager told the researcher that it is voluntary except one manager in Assembly Shop. This Manager was very much vocal about this issue and quoting him “nothing voluntary works in any organization in this country and for that matter in any country where western culture prevails.” He also told that a heated discussion on this very issue developed in National Convention on QC held in Pune in 1995. There, almost every body agreed that voluntary participation is not effective. Elaborating further, he said, “From starting itself, we made it compulsory to let it be ingrained in the work culture of the organization. Our aim is to reach to that position when truly voluntary participation generates so much commitment that QCs maintain their effectiveness.” When quizzed about why the QC performance is not included in the performance appraisal of the participant, he replied that this will jeopardize our aim of making the participation in QC voluntary. Workers also don’t give significance whether the participation is voluntary or compulsory¹². As production is stopped in time of QC meeting, it is regarded as compulsory to participate in the QC meeting for all practical purposes. As one line I/C of level L₁₀ in M/C shop put it, no question of absenteeism from QC meeting arises as after stoppage of production, all the group members go to the QC meeting place under the leadership of the group leader. As far as participation of managers and executives is concerned, it is there in non production areas but in the production areas, the participation

¹¹ Talk with a Assembly Shop manager

¹² Talk with workers in M/C shop and Engine Assembly shop.

is not active. They participate in QC in only consulting capacity. They participate in a QC when they feel that the QC has got stuck at some stage.

4.3.2.2 QC Constitution :

Normally there are 6-7 members in a QC belonging to a shared work area. The leader of the group is line I/C or supervisor of that particular area. Taking example of Machine Shop, there are total 16 lines divided in 3 sub shops of 800CC-I, YE-2 and 800CC-II. In each line there are 6-7 workers, one setter (setting machines in that shop), one inspector and/or group leader. A line I/C generally looks after more than one line and is more concerned with general maintenance activity of the lines under him and liaison with the other departments. The group leader is executive head of the line whose job responsibilities include :

- material availability,
- worker - m/c allocation, and
- worker adjustment on different M/c(s) in the wake of absence of some worker(s).

The grades of these constituting members of a QC are as follows:

- Technicians(workers) : $L_3 - L_7$
- Setter and Inspector : $L_3 - L_7$
- Group Leader : $L_6 - L_7$ level worker who has been appointed asst. supervisor or $L_8 - L_{10}$ levels(Supervisors)
- Line I/C - Supervisors ($L_8 - L_{10}$)and Executives ($L_{11} - L_{12}$).

4.3.2.3 QC Working :

In one hour time of stoppage of production for QC, the group leaders and the QC members sit around in a prefixed area and discuss the problems they are facing in their working. The Table 4.3.2.3A which is actual Quality Circle Meeting Report Form, gives the complete route by which to tackle the problem. The first stage is to list down all the problems and then to select most important problem in present situation. Then problem is analyzed through fish bone diagram. The group members then discuss the problem and search for the countermeasures. After every meeting, group leader has the responsibility to fill this form. The content of this form are on-line in account of each group. The DPM (PKC) and concerned DPM monitor the progress of the QC. Whenever it is found that a QC has stuck at any stage or it is in need of any assistance, managers of the concerned departments also

participate in the next QC meeting. If any QC has not been able to find the solution of a problem it has selected, the discussion continues in the next meeting also.

4.3.2.4 Training for QC :

As per MUL's emphasis on on-the-job training, technicians and supervisors get trained in QC technique by doing QC. When QC was started in the organization in 1985, supervisors were trained by Suzuki's personnel at MUL's plant, who had come to assist Maruti in standing on its own feet or at Suzuki's plant in Japan while being trained for the jobs. After that period with evolution of the organization, the training programme in the organization has also evolved. There is training for QC also. Newly inducted supervisors are to attend this training. It is a two days course. First full day is devoted to problem selection techniques, problem solving methods etc., discussion of cases on QC from MUL and Suzuki Motor Corporation (SMC), Japan. The second day involves the trainees in doing actual QC. They are asked to come up with problems from their work area and training is imparted to them by selecting the problem, drawing fish bone diagram and listing causes of the problem and getting suggestions about the countermeasures, evaluating the countermeasures and selecting the best one. It is supposed that these trained supervisors, who are to be group leaders of their respective groups, will naturally impart this knowledge to learning group members (technicians) while participating in QC. So, even after our stopping of recruitment at supervisor level (L₈), persons coming up as assistant supervisors get trained from their supervisors and they are fully capable of training the new workers in their group¹³. But no training on QC is provided to technicians directly. In annual training programmes, it is not included till now. The technicians don't understand the significance of the fish bone diagram¹⁴. Due to this, they may not utilize fully the tool. They may be drawing the diagram simply for the purpose of reporting.

QC ACTIVITY AT QUALITY SYSTEMS (QS) DEPARTMENT

In notifying for internal audits by QS department, the usual practice was to send notification to concerned department by paper mail. The common complaint of the to-be-audited departments that we were not informed properly or got information so late that we got no time for preparation. To solve this chronic problem, it was decided to send the audit notice

¹³ Told by a manger in Assembly Shop and by DPM (PKC) .

¹⁴ Told by workers in Machine Shop and Engine Assembly Shop.

by internal E-mail to the DPM of the concerned department and also to DDVM of the concerned division under which the department falls. Now no body can complain about late information or no information. The action and necessary steps in its execution were decided in the QC meeting in the department.

MARUTI UDYOG LIMITED					
QUALITY CIRCLE ACTIVITY - REPORT OF MEETING					
Date	Department:		Name of Group:		QC Group Regn. No
Total No. of Members:		No. of Members Present:		% Attendance	
Stage No.	1	2	3	4	5
	Listing of problems or not?	Identification of most important problem?	Analysis completed or not?	Countermeasures taken or not?	Results Confirmed or not?
Put \checkmark for completed activities					
1 Have you listed down the problems which you would like to take up for discussion in QC meeting? Yes/No					
2. Have you selected the most important problem? Yes/No					
3. If yes, state problem in brief.					
4 Have you done analysis or not? Draw Fish bone diagram.					
5. Countermeasures Taken/Results Achieved (Be Specific)					
Countermeasures Taken		Person Responsible		Target Date	Results Achieved
6. Results of Countermeasures confirmed or not? Yes/No					
Signature of Group Leader:			Signature of DPM:		

Table 4.3.2.3 A : Working of QC

QC ACTIVITY AT ESTABLISHMENT AND TIME OFFICE

From 1992, attendance was started to be used in the performance appraisal and management committee started monitoring its trend on weekly basis. So in each week, inordinate amount of time started being consumed in compiling the plant wide data of attendance. In department QC meeting it was decided to feed all the employee attendance data in computer and make it available on line. Now any person in the company can see the attendance record of any employee at any time. Through QC the format of the information was determined.

4.3.2.5 Evaluation and Reward System for QCs:

The whole organization is divided into 6 broad groups by putting 2-3 divisions/departments under one group. These groups have been given in Table 4.3.2.5A. From each department, the best QC is selected by the DPM of the department, on the basis of a number of criteria which are given in the Table 4.3.2.5B. Then, these QCs compete for the best 3 QCs slots from each group listed above. This selection is done by the DDVM in the concerned group. Again the criteria are the same. Then the best 3 QCs from each group vie with each other for top 3 slots in the organization. These QCs present their work before a committee comprising JMD - Production, DVMs and DDVMs. They are rated on a no. of factors. These factors and associated weightages are given in the Table 4.3.2.5B (the same factors and weightages are used for evaluating in earlier stages also). The best 3 QCs' members are given prizes of Rs. 500, Rs. 1000 and Rs. 1500 for the 3rd, 2nd and 1st team respectively and certificates signed by MD. The best QC from MUL is sent at national level competition of QCs. If it wins there also, every member of the QC along with his family members is invited on dinner by JMD - Production. When asked about the importance of the dinner hosted by JMD, one senior level worker, who had once attended the dinner, compared it with a tea with prime minister¹⁵. He said that the tea was not important. What was important was recognition by prime minister, he added. Similar is the case here. The team sent at national level, is sent to Japan where in addition to visiting Japan, it participates in QC competition organized by Suzuki among the QC winners from each of its plants world-wide. If it wins there also, then the members of this QC team are sent to some other country for tourism. (No team from MUL has yet won that competition.)

GROUP NO.	INCLUDED DIVISIONS/DEPARTMENTS
1	Engineering, Technical Administration, QA & Service, Parts Inspection
2	Marketing & Sales, Spares
3	Production - Plant - I
4	Production Engg., Materials I & II, CPC, Personnel and Administration, Finance, Information Technology, Vigilance, Legal Cell, COA, CPD
5	Production - Other Departments
6	Production - Plant - II

Table 4.3.2.5A Groups for QC Competition

¹⁵ Talk with a worker in Machine shop.

S. NO.	ITEM	MAJOR EVALUATION POINT	WEIGHTAGE
1	PROBLEM SELECTION	- Why was this particular problem taken up? -Is this problem more important than the other problems in that area?	10%
2	GRASPING THE SITUATION	- Was the problem investigated from various points of view? - Were the facts fully analyzed? - Was the past data/facts collected?	10%
3	TECHNIQUE	- Which QC tool were used to solve the problem? - Were the QC Tools/Techniques successfully used?	10%
4	COUNTER MEASURES AND EXECUTION	- How many counter - measures were considered and implemented? - Are there good connections between causes and counter - measures?	10%
5	TEAM SPIRIT EXHIBITED IN PROBLEM SOLVING	- Did all members participate actively in finding a solution? - Did the QC members and implementing agency co-operate with each other? - How much effort was put in to solve the problem?	15%
6	ACHIEVEMENTS	- What are the benefits to the organization?	10%
7	STANDARDIZATION	- Have effective counter-measures been taken to prevent the problem from recurring?	10%
8	QUALITY OF PRESENTATION	- Is there clarity in presentation? - Is the presentation understandable by everyone? - Time Management(12 minutes maximum) - Is there co-ordination amongst members? - How is the quality of slides/presentation?	25%
	TOTAL		100%

Table 4.3.2.5B Evaluation of a QC's Project

4.3.3 Kaizen :

As explained earlier under 4.3.1 and 4.3.2, *Kaizen* is the 3rd bone in the vertebra of quality movement of the organization. The problem for *Kaizen* is identified by the persons doing the job. It comes from suggestion or QCs. There is a *Kaizen* workshop in every production department. Like in Assembly shop's *Kaizen* workshop, there are two supervisors, and a number of workers for welding, finishing etc. There is a register in each department for writing down the *Kaizen* projects and their status while in progress. The person who wants to get some *Kaizen* done in his work area, notes down his proposal and work in the register. One supervisor from *Kaizen* workshop, reads it and goes to the problem site. There he studies the problem and then writes estimated date of completion of project in the register. Now the problem has become the responsibility of the supervisor. The *Kaizen* workshop in collaboration with the person concerned, works on the problem. If *Kaizen* is

not completed in stipulated time as written by *Kaizen* Workshop supervisor, the supervisor has to note down the reasons why the work was not completed in the time stipulated. The person reporting for the *Kaizen*, in the first place, has the responsibility of evaluating the job done and search for further suggestions. There is still not any system in place for evaluating the improvements done vis-à-vis earlier situation and to further devise the improvement. But workers and Supervisors are very enthusiastic about it. A group leader (L₅ level), in M/C shop enthusiastically showed the researcher a number of *Kaizens* done in the department. This enthusiasm comes from managers' involvement. As explained under Section 4.4.1, JMD- Production & Planning, reviews each and every *Kaizen* in all the shops. This helps in giving recognition to the efforts of employees. Also, whenever any financial resource is needed, depending upon the amount, the employees get it sanctioned from the competent authority. When asked about it, a worker in Engine Assembly shop replied, "Never in my career at MUL, I have been turned down for financial resource requirement." The same was the response by a number of workers and supervisors in M/C shop as well as EA shop.

4.3.4 5-S, 3-G, 3-K:

These practices have been adopted from MUL's Japanese collaborator. The essence of these are given below :

	3-G
GENCHI :	Go to the spot immediately
GEN-BUTSEE :	See the actual problem
GEN-JITSU :	Take appropriate counter measure.

	3-K
KIMERARETA KOTO GA :	What has been decided
KICHON DORI :	as per standard
KICHIN TO MAMORU :	must be followed.

	5-S
SEIRI :	Orderliness
SEITON :	Arrangement
SEISO :	Cleaning
SEIKETSU :	Cleanliness
SHITSUKE :	Personal Discipline

These practices are preached to the employees to be followed in daily work life. For example, 3-G is made to be followed in problem solving. Similarly 3-K is advised to be followed as it is a requirement of the ISO also to follow the procedures strictly. 5-S forms the backbone of housekeeping in MUL. Management also shows visible commitment to these programmes. As discussed under plant audit headline, Management pays special attention in following the 5-S in the shops.

4.3.5 Confirmatory of Production (COP) Certification :

When MUL decided to export its vehicles in 1990, it had to follow the stringent regulatory requirements. For example, for supply to European Market and Australian markets, one has to get the Confirmatory of Production (COP) certificate. In 1993, MUL got certified first time for COP. When asked about the purpose it served when the company was already going for ISO 9002 certification, DPM (QA) told, "European Agencies extend arguments that you may have a system according to ISO 9000 requirements, but it may not be fulfilling our norms. They provide standards for the parameters which have to be followed during the production stage itself." Some of these parameters are :

- Torque at different rpm(s) etc.,
- Braking force,
- Steering angle etc., for each production lot. The certifying agency calls for data. For this purpose, a separate COP lab has been established which has the sole responsibility of collecting the data required and assurance of meeting the criteria. This certification comes for review in every two years. Due to a separate lab, now the COP is done for vehicles of both domestic market as well as export markets, but the parameters for domestic market are the ones which come under regulatory requirements, released by Government while parameters for export market are sent by certifying agency of the specific market like Europe or Australia.

4.3.6 ISO9002 Certifications: From 1990, a quality administration group(QAG) was formed. Earlier there was a separate section of vendor consultation and a separate department for QA under QA and Service division. In 1990, QAG was formed as a section for establishing and auditing procedures and systems in the organization. In 1996, a

separate department named QS department came under existence with two distinct sections

- (i) The section dealing with vendor assistance in quality system,
- (ii) The section dealing with internal quality systems. So with the formation of QAG, process of establishing systems and procedures in the organization had started but it was more centered on MOS preparation in production departments and procedures and systems in these departments. With growing awareness, organization decided to go for ISO 9002 certifications.

4.3.6.1 Awareness Drive :

In starting, to spread awareness of ISO 9002, a booklet was prepared and distributed on shop floor among workers. The booklet had the information about ISO 9002, its requirements, its need, what the person is supposed to do, need for following procedures and systems in place. In addition, workshops for supervisors, executives and managers, were organized to get them acquainted with ISO requirements, certification process, documentation and follow-up of documents.

4.3.6.2 Preparation and Certification :

The section dealing with standards, procedures and systems under QAG, was burdened with responsibility of making standards and procedures in collaboration with concerned departments and auditing the departments. Also, management annual plant audits in year 1993-94 and 1994-95 were totally focused on compliance with ISO requirements. In 1995, MUL got certified for ISO 9002 from a Belgium certifying agency.

4.3.7 Vision, Mission, Quality Policy and TQM :

Till 1992, MUL was a government company whose objectives were set by government, which are given under Section 4.1(The Company). Protectionist policies of Government greatly favored MUL and helped it in establishing itself as the market leader. But a major contribution was also of the business practices brought over from SMC. After 1992, a torrent of reforms in automobile sector saw MUL being converted into a non-Government company. A rush of major auto manufacturers began towards India from the sluggish markets of developed world. To compete with them, MUL decided to align its quality

practices along the lines of TQM. The first task identified was to give the organization a goal and it was provided a vision statement. Vision statement in MUL was formulated by management committee and Board of directors. It was not done due to any crisis. In the words of DPM-QS, “ Vision gives a goal to the organization whereby it strives to reach and keep the organization alive.” At the same time, mission statement was also formulated.

MUL's VISION

Our vision for future is to become an internationally competitive company in terms of our production volumes, costs, quality and profits. We must not only retain our leadership in India but should aspire to be amongst global players. Our culture, our thinking and our actions have all to be consistent with this vision.

MUL'S MISSION

To provide a wide range of modern, high quality fuel efficient vehicles in order to meet the need of different customers, both in domestic and export markets

In formulation of both of them, there was no involvement of managers below DDVM level (see organization hierarchy in APPENDIX -E). Japanese organizations are hallmark of quality for the last 2-3 decades. Having a Japanese collaborator proved a major boon for quality of MUL's offerings. In 1993, when the organization decided to go for ISO9002 certification, the need for a formal quality policy was felt. It was realized that it should be generated from among lower levels, because they are the persons whose work decided quality of MUL's product¹⁶. So ideas about quality policy of the organization were invited from all employees of the organization and it was released in every sphere of its working to satisfy its end customers. For increasing awareness of all the three, a booklet was produced.

MUL'S QUALITY POLICY

Consumer satisfaction through quality of our products and services, achieved by constant adherence to procedures and systems.

4.3.8 Recruitment & Training :

Since MUL was using imported technology, from the beginning, it was imperative for MUL to impart training to its employees about the work processes. Also when MUL was started in 1983, no other automobile company in the country was using that modern technology

¹⁶ Talk with a senior manger - Assembly shop.

which MUL was going to use. So MUL had no other company from where it could allure the experienced workers, supervisor and managers (unlike now when the new automobile companies setting up production facilities in India, are wooing MUL employees). The initial recruitment of workers(technicians) was done mostly from ITIs and also some from other automobile companies which were at that time in the country. The recruitment of supervisors was done from Polytechnics and also of experienced supervisors from other companies. Managers were taken from the other automobile companies and also from other manufacturing industries. From the time of inception itself, MUL decided to have a strong presence of high quality engineers and till date, the direct recruitment of engineers is done only from IITs and some other highly reputed institutes like University of Roorkee and DCE, Delhi. Otherwise, the recruitment is done through an All India Written Test for engineering graduates and then interview of the screened candidates from the written test. When the company was started, collaborator SMC had sent a lot of its personnel to train people from its Indian Counterpart, MUL. Also, from the starting itself, there was a standing agreement between SMC and MUL that SMC will provide two batches of technicians and supervisors and managers, six months training at SMC facilities in Japan each year.

4.3.8.1 Recruitment :

The present Recruitment system is as follows :

Workers (Technicians): From ITIs, a batch of trainees are admitted at L_{w0} level through a written exam. They are given one year training at MUL's facility at Gurgaon. After that, depending upon the vacancies, a selected number of these trainees are taken for ad hoc recruitment at L_{w0} level through the written examination. These persons are imparted two years' training in the organization. After their performance is evaluated, they are given permanent recruitment at L_3 level. The technician levels continue upto L_7 level.

Supervisors : Earlier they were being taken from Polytechniques through written exams and interviews. But from 1992, this practice has been discontinued. Now the persons from technicians level itself are promoted to assistant supervisor and then to supervisor levels (L_8 - L_{10} level).

Executives : Engineers are taken through campus recruitment or through written exams for GETs(Graduate Engineer Trainees). They are recruited at L₁₁ level and promotion is done to managerial cadres from among these trainees itself.

Also from Management Schools, marketing and finance professionals are chosen and recruited at L₁₁ levels. The executive levels are upto L₁₂ level.

Managers : Managerial salary levels start from L₁₃ level and continue upto L₁₈ level, which is MD's position. The managers are promoted from executives itself. Since the organization is only 14 years old, no person from supervisor rank has been promoted to Managerial levels.

4.3.8.2 Annual Training Plans (ATP) :

The present practice in MUL is that the training department releases annual training plans on different topics, need for whom is identified through last year's performance appraisals. In performance appraisal process, each manager has to state the training needs for his department. Also the following other ways are used to identify the training needs of the personnel :

- (A) Questionnaires filled by trainees after every training programme.
- (B) Suggestions invited from employees and their managers in form of survey/circular.
- (C) Training need assessment forms and appraisals reports.
- (D) Feedback from management to align the training function to organization goals.

Till 1993, training hours per employee were limited to 3 hours per year. Now a target has been fixed for 17 hours training per employee in a year. But this norm is not being met. The workers in M/C shop, for example, don't acknowledge getting 17 hours training in 1996¹⁷. The reason for this, as told by DPM - M/C shop, is the ever-increasing demand for increasing production. The only free time in which a worker can be given training is half yearly production stoppages for one week. After each training programme, the trainees are asked to fill a training feedback form in anonymity to have a free and frank assessment of topic, methodology etc. for each training. Some of the ratings for the training Programmes organized in the last two year's has been given in the following TABLE 3.8.2A¹⁸. To measure the training effectiveness, after training, perception of controlling managers is

¹⁷ Talk with M/C shop workers.

¹⁸ Taken from the Company documents.

sought regarding improvement in performance of training. The data for the last year training has been given in Table 4.3 8.2 B. The data of ATP held in last 4 years is given in the Table 3.8.3C. Till now, around one fourth of the total workforce (4096), has been trained in Japan.

4.3.8.3 Induction Level Training For Executive Levels (GETs/MBAs) :

First orientation training is provided to give them insights about how company functions, its culture and its structure. To MBAs, 3 months training is imparted in the related function. For GETs, 10 months training in production engineering, materials, quality, parts inspection departments and two months on-the-job training is provided. Also, behavioral and theoretical inputs in modules of 2-3 days like communication and interpersonal skills, finance, etc. are given.

RATINGS OF ATP BY PARTICIPANTS[1(POOR)-2-3-4-5(VERY GOOD)]			
S NO	PROGRAMMES	94-95 RATINGS	95-96 RATINGS
1.	Attitude & Motivation	4.09	4.04
2	Computer Programming	3.66	4.14
3.	Creativity	NA	4.21
4	Communication and Interpersonal Skills	4.06	4.19
5.	Finance	3.71	3.55
6.	Health and Safety	3.93	3.6
7.	Leadership and Team Building	4.08	4.44
8.	Materials Management	3.43	3.22
9.	Negotiation Skills	NA	3.76
10.	Organization Awareness	3.65	3.84
11.	Project Evaluation & Monitoring	3.66	4.28
12.	People/Customer Handling	3.61	4.03
13.	Quality	3.59	3.56
14.	Training for Internal Trainers	NA	4.33
15.	Vendor Evaluation	3.8	3.83

Table 4.3.8.2A Courses in ATP and Their Rating by Participants

GRADE	PERCENT OF MANAGERS AGREED WITH THE GRADE
EXCELLENT	7
VERY GOOD	40
GOOD	27
FAIR	20
POOR	6

Table 4.3.8.2B Managers' Perception of ATP

YEAR	TRAINING HOURS	NO. OF PROGRAMMES
1992-93	190	127
93-94	338	169
94-95	1178	149
95-96	1555	169

Table 4.3.8.2C Training Hours for Last 4 Years

4.3.8.4 Outside Training :

MUL arranges for 15 months management training to its managers in MDI (Management Development Institute), Gurgaon. Also, training related to ISO like Lead Assessor Training, Auditor's Training, Quality Circles are arranged in collaboration with CII. Training related to TQM, SQC, Information Technology is arranged for its executives in courses conducted by IIMs and IITs.

4.3.9 CII-Exim Award for Business Excellence:

This award was instituted by CII in collaboration with EXIM Bank of India, in 1994. European Commission has been involved with the quality movement in India over the last decade. It is the sponsor of this award and provides technical assistance. In recognition of the potential for gaining competitive advantage through application of Total Quality, 21 leading Indian Businesses took the initiative of forming the Total Quality Management Division in 1988 under CII. TQM division has following two roles :

- (i) accelerating the acceptance of quality as a strategy for global competitive advantage, and
- (ii) stimulating and focusing the deployment of quality management activities. One important element of TQM division approach is the promotion of self assessment as a key business activity. Once the self assessment has become routine and sufficient data has been collected, the organization may find it beneficial to make an application for the award. This award uses a number of criteria for rating the companies. The model used is same as model for European Quality Awards. Some of the winners in the past of European Quality Award are Texas Instruments, Miliken European Division, Rank Xerox Ltd., ICL manufacturing Division. The model is based on practice of Total Quality Management in the organization. It is based on the following premises:

Customer Satisfaction, People Satisfaction and Impact on Society are Achieved

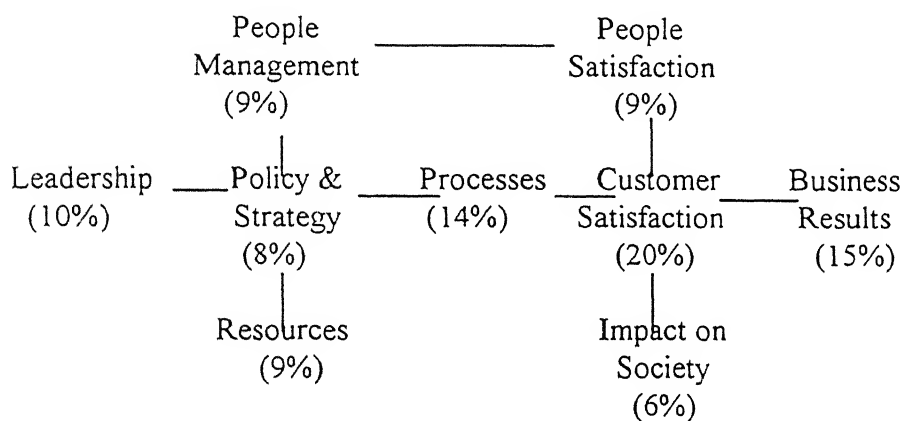
through

*Leadership Driving, Policy and Strategy, People Management, Resources and Processes,
Leading Ultimately to Excellence in Business Results.*

The criteria can be divided into two different sets :

- I . The Enablers : They decide about how organization approaches each of the criteria under enablers
- II. The Results : They tell about what organization has achieved and what it is in the process of achieving.

Expressed graphically, the award criteria structure looks like this :



4.3.9.1 Application by MUL for This Award :

MUL decided to go for this award in 1995. When decided, the project teams under different functional heads (DDVM rank) were made. On every team, persons from Quality Systems were members. The teams comprised DPMs and Executives. Every team had the responsibility to prepare documents regarding one of the criteria. Prior to embarking on this project, QS department organized training sessions for all these persons regarding the award, the expectations, the criteria of the award, and the preparation of the award documents. MUL applied for the 1996 award. It was one of the three finalists in the race for the trophy but none of the three finalists could cross the threshold mark for getting the award. Nevertheless MUL was one of the two finalists (the other being TATA STEEL) who got the certificates for their magnificent achievement in journey towards Business Excellence through the route of Total Quality Management.

4.3.10 Employee Satisfaction Survey :

MUL started conducting employee satisfaction surveys from 1995. The survey was conducted with the objective to find out whether work culture was leading to employees satisfaction and hence to improvement in quality and productivity. A pilot study to decide about parameters and validate the questionnaires was conducted. The parameters of the questionnaire have been given Table 4.3.10A.

The job security in MUL is very high. It is evident from the fact that out of 4096 employees, 2233 have completed 10 years of service.

Certain indirect measures are also used for measuring the satisfaction of employees. These are given in Table 4.3 10B

1	Job content satisfaction level
2	Communication satisfaction level
3	Interpersonal relationship & satisfaction level
4.	Team work satisfaction level
5.	Accountability satisfaction level
6.	Welfare satisfaction level
7	Job security satisfaction level
8	Leadership satisfaction level
9.	Working condition satisfaction level
10.	Development satisfaction level
11.	Compensation
12.	Recognition
13.	Creativity
14.	Appraisal

Table 4.3.10A Parameters in Employee Satisfaction Survey

MEASURES	91-92	92-93	93-94	94-95	95-96
Kaizen implementation no.	7623	22400	24400	23857	25988
Cost savings through QCs and Suggestions (Rs. millions)	54	65	84	84	340
Suggestions implemented		13136	18246	19089	21351
QC meetings	2878	3072	3200	3162	6032
Employee turnover(%)	2.11	2.03	1.77	1.04	1.18
Monthly Incentive per line worker (Rs.)	1037	1500	3088	4035	4627

Table 4.3.10B Indirect Indicators for Measuring Employee Satisfaction

4.3.11 Quality Month : In November every year, organization celebrates Quality Month. In this month, different programmes like Poster and Slogan Competition, selection of best *Kaizen* from the whole plant by top management, awareness drive for quality, reorganization of quality programmes and their review etc. are done. This practice has been adopted from Suzuki.

4.4 Factors Related to Implementation of TQM

4.4.1 Leadership Commitment:

The top management of MUL is very much involved in steering the TQM programme and reinforcing the culture. Due to evangelical focus on maintaining the openness, managers are put always at risk of being scrutinized by their subordinates and also peers. The management's involvement and commitment to Quality Culture in the organization can be described under the following subheadings :

4.4.1.1 Management Committee:

This is the top committee involved in day-to-day decision making about the plant. The members of this committee are MD, JMDs, Executive Directors, Divisional and Deputy Divisional Managers of all the divisions viz. Production, Engineering, Materials, Personnel and Administration, Finance, Marketing and sales etc. in the company. The committee meets on Tuesday of every week at the plant at Gurgaon. This committee monitors all the issues related to company and decisions at this committee are made to flow down to the lowest level. The committee monitors following parameters' trends at present:

- | | |
|--|--------------------------------|
| i). Production Volume | ii). Total Dispatches |
| iii). Quality Index | iv). Material Inventory |
| v). Quality Report from PI and Service | vi). Line Rejections |
| vii). Cost Savings through Suggestions | viii). Capital Expenditure |
| ix). Attendance % | x). No. of Employees |
| xi). Productivity | xii). Finished Vehicles Stock |
| xiii). Cost of Rejects | xiv). Warranty Claims |
| xv). SRV(Store Receipt Voucher) rejections | |
| xvi). No. of Vehicles Serviced Per Day | xvii). No. of QC meetings held |

- | | |
|--|-------------------------------------|
| xviii). Total Expenditure Incurred | xix). No. of Accidents |
| xx) No. of Employees joined/trained/left | xxi). Line Stoppages |
| xxii). Export Vehicles Stock at Port | xxiii). Average Defects per Vehicle |
| xxiv). Stock Rejections | xxv). No. of Suggestions |
| xxvi). Total Revenue Earnings | xxvii). No. of Items in Backorder |
| xxviii). Man-days Lost due to Accident and /or Other Reasons | |

The parameters being monitored, have evolved over time. All were not in the above list from the beginning. The Management Committee is there from the time the company was established. Earlier, only factors related to production and productivity, like Production Volume, Dispatches, Productivity, Expenditure, Revenue were there in the list. Since MUL has a Japanese collaborator, where JIT is a common practice, it also started monitoring both supply inventory and finished inventory. Then to reinforce the culture of continuous improvement through suggestions and QCs, parameters like No. of Suggestions, No. of QC Meetings and Cost Savings through Suggestions and QCs were included. To give strong and tangible message to employees about quality, Management Committee started monitoring Cost of Rejects, Average Defects per Vehicle, Quality Index, Line Rejections etc. To monitor the supplier performance, Quality Reports from PI and SRV rejections are monitored. To tap the market sentiments about the quality of its products, also on the agenda of discussion are Quality Report from Service, No. of Vehicles Serviced Per Day, Stock Rejections, No. of Items in Backorder etc. Latest entrant to the list of factors is Warranty Cost. Necessity of this arose due to high cost of warranty and consequently to give strong message to workers about the cost of their fault. Now in every shop, trend of warranty cost arisen due to fault of that department is recorded and monitored. This has helped in focusing the attention of employees towards the cost of their carelessness and poor workmanship. Also the cost of rejection is very much emphasized. For example, in M/C shop, on each line, rejection cost of component being machined are written. This way the workers are made aware of the importance of their good workmanship, following procedures and care in working.

4.4.1.2 Giving and Receiving Training :

MUL has a practice in place for annual training programme, released on 1st January of every year by the Training department. This training programme consists of different short

courses spread over the year (refer Table 4.3.8.2A). The topics ranging from Human Aspect of Management and Attitude & Motivation to ISO 9000 to Computer Programme to Creativity & Negotiation Skills and to Quality¹⁹ The in-house training for workers, supervisors and executives is provided mainly by internal faculty, i.e. senior managers of MUL. The managers in a select group undergo 15 months training at MDI (Management Development Institute) , Gurgaon with an aim to develop managerial skills. Some managers do get training at Suzuki's plant in Japan but it is on-the-job training. The persons from MUL who have come to get training at Suzuki, Japan, are posted in the same capacity as in which he was posted in MUL. He gets training by working on the most sophisticated equipment learning the application of latest management practices, at the world class plant of Suzuki. According to a manager in EA shop, this a very motivating factor for Workers and Supervisors as they are getting a chance to visit Japan at MUL's expense. Workers also highly regard it²⁰.

The annual training programme is prepared based upon training needs conveyed by the DPMs of the respective departments for their supervisors and technicians. These needs are identified and conveyed while doing the annual performance appraisals of workers and supervisors by the superiors. Managers frequently go on outside training like for ISO 9000 Lead Assessor programme, convention on QC etc. This way they show their seriousness and commitment to continuous learning. Technicians and Supervisors are also sent on outside training in India but basically it is technical training.

4.4.1.3 Accessibility and Listening to the Staff :

When MUL was started, there were offices for De. General Manager level (which later became Dy. Div. Managers) and above, which had a door for entrance. But, in words of DPM-QS, "It was realized that although there is openness upto DPM level, persons above that level and below that levels are being put apart. There was a lack of communication between them. Whenever you put a door to your office, the person going to that office will hesitate before knocking, but in open offices (with no doors), any subordinate will unhesitatingly approach the higher authority without any inhibition as it is regarded as a sign that you are welcome to approach me anytime you find me free." MUL has taken special

¹⁹ Taken from company Training Document.

²⁰ Talk with workers from M/C shop.

care in promoting the openness in the organization and providing opportunities for intermingling of lower and higher levels. Workers also perceive it in a positive perspective. They say that irrespective of level, they approach their higher level managers with almost no inhibition with the problems. The problems can be of any type from personal ones to work related.

I. Common Dress :

Every person in MUL has to don same colored dress made up of same material. Only difference by which you can identify the three broad levels in MUL i.e. workers (Technicians), supervisors and managers is by color of their cap. Workers (L_3 - L_7 salary level) put gray cap, supervisors and executives (L_8 - L_{12} levels) and managers (L_{13} and above) don white cap. The cap color is different for the purpose of identifying the group of persons. When a worker has to approach a DDVM, wearing same clothes as he, he will feel more comfortable in comparison with situation when he has to approach a DDVM in suit and tie or in a different colored dress.

II. Open Office :

There is no doored cubicle/office for any manager in MUL's plant at Gurgaon. If there are offices like in production shops, then that is the place where administrative works like record keeping, production monitoring, computer services etc. are put down and DPM and managers sit there itself. But these offices have no door or even if there is a door, then it is always open. Also, every cubicle in the plant is glass paneled. So the persons sitting in cubicle are always at risk of being scrutinized by people at shop floor. Any technicians/supervisor can freely come to DPM or DDVM depending upon the problem. DPMs and DDVMs of the production shops pass their maximum time on shop floor. Generally, they concentrate on areas facing some problem like quality or material etc.²¹. Persons high in organization hierarchy like Ex. Directors etc. sit in a common hall. Like Ex. Director - Engg has his table at one nook of hall in which the departments of QA and Service and also of Engineering, have their tables. Also no official appointment is necessary for meeting upto JMD level. Prior appointment is necessary only for meeting MD. Once one worker of L_5 level was dissatisfied with his performance appraisal of a particular year which

²¹ Talk with a group leader and workers in M/C shop

barred his promotion to Asst. Supervisor. He complained to MD. MD initiated an enquiry into the matter and person was counseled by JMD himself.

III. Common Canteen :

In line with its policy of no difference in treatment of any persons whatsoever his level is. MUL has a common canteen for all the employees. The lower level employees value it very much. (This also provides opportunity for intermingling of different levels' employees (although the researcher could not find much evidence of it. This fosters the intimacy feeling in the department and helps in breaking the walls, if any, between different levels.)

All the above three - Open Office, Common Canteen, and Same Dress are adopted practices from MUL's collaborator SMC. When MUL went for collaboration with SMC it decided not only to import technology but also to import the business practices which have made Japanese company(s) successful world-wide²². Of course, some practices were adopted with some modification keeping in view India's different social culture in comparison to that of Japan. For example, participation in QC was made compulsory instead of voluntary as in Japan. Of course, there has been grudge from certain quarters against such policy But as DPM (QS) put it, "they were left with no choice but either to follow the rule or live by cutting off the stream. Like a person not coming in dress, himself will feel out of crowd and alienated as he is single person without company dress and he can be easily picked from the crowd. Throughout his stay in the organization, the researcher did not come across a single person without company dress.

IV. Sahyog Samiti Meeting :

Two years back, there was a Sahyog Samiti in which MD used to meet directly with the representatives of workers, supervisors, executives and managers. The discussion used to be centred around specific problems faced by each of these levels. But two years ago, these meetings were discontinued. There are two views for its discontinuance. One view is that participants in the meetings noticed that these meetings' effectiveness was not at a level compared to the time involved in it. While second view is that the agenda of the meeting was directed by top(MD) and it became a place for one way communication from MD to lower levels and so lower levels lost the interest in it.

²² Talk with a senior executive - QS department

4.4.1.4 Information Sharing :

The normal information flow chain in the organization is given in Figure 4.4.1.4 A(This information channel is followed for policy decisions like incentive fixation, production targets, capacity expansions, financial resources etc.). This information flow is basically with respect to parameters monitored by management committee meeting.

Also in production areas daily meetings take place to discuss the production related problems. These meetings specifically concentrate on .

- daily production,
- interdepartmental problems.
- supply of vendor's materials, and

specific quality problems related to that production dept. The information flow path has been shown in the Figure 4.4.1.4B

Majority of information flow in both the channels is from top to bottom but bottom to top information flow do happen. As while fixing the production target of a year, the flow from top to bottom conveys the information about management plans and general business condition for the company while flow from top to bottom conveys :

- present resources,
- constraints and bottlenecks,
- preparedness at the lower levels to meet those plans and required resources to meet those plans.

That way the production target of the organization as a whole and of different departments is decided. But there is no involvement of workers or supervisors in fixing the target. The information about the departmental constraints are acknowledged by the managers of the department and conveyed to top. Also MD sends a newsletter to all employees once a year. In this, he conveys the performance of the company in the previous year, achievement of the organization, plans for the next year and expectations from employees.

4.4.1.5 Participation in Quality Programmes :

Top management at MUL directly oversees the company wide progress in different quality Programmes like QCs, suggestion schemes, and *Kaizen* activities. Top management does the plant audit once a year.

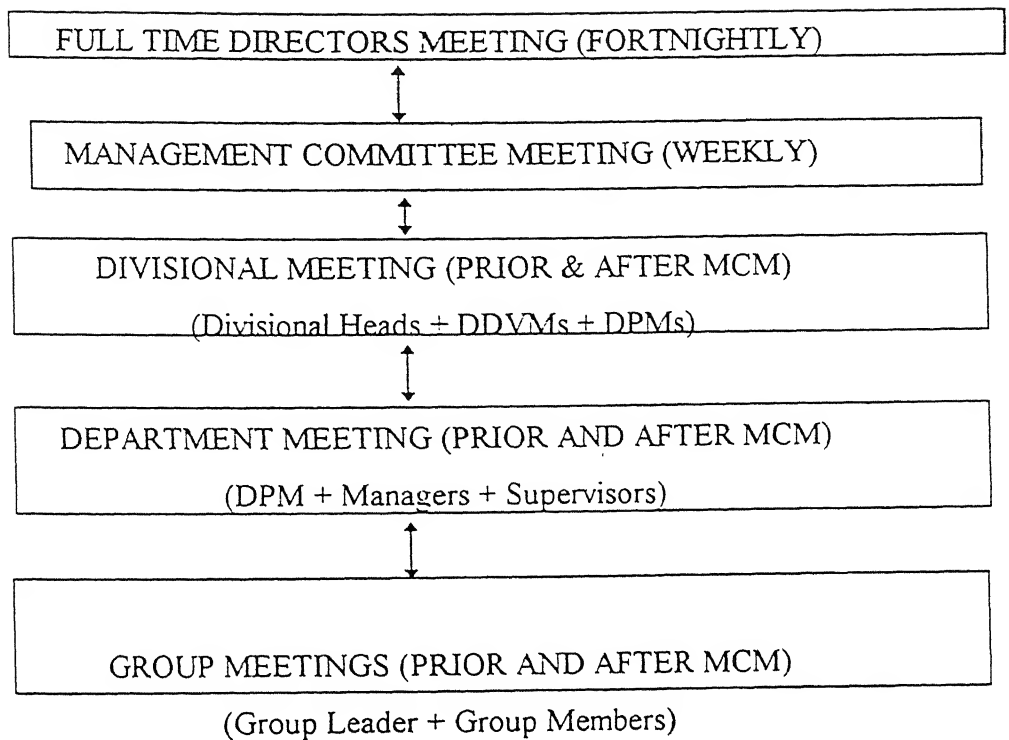


Figure 4.4.1.4 A Information Flow Regarding Policy Decision

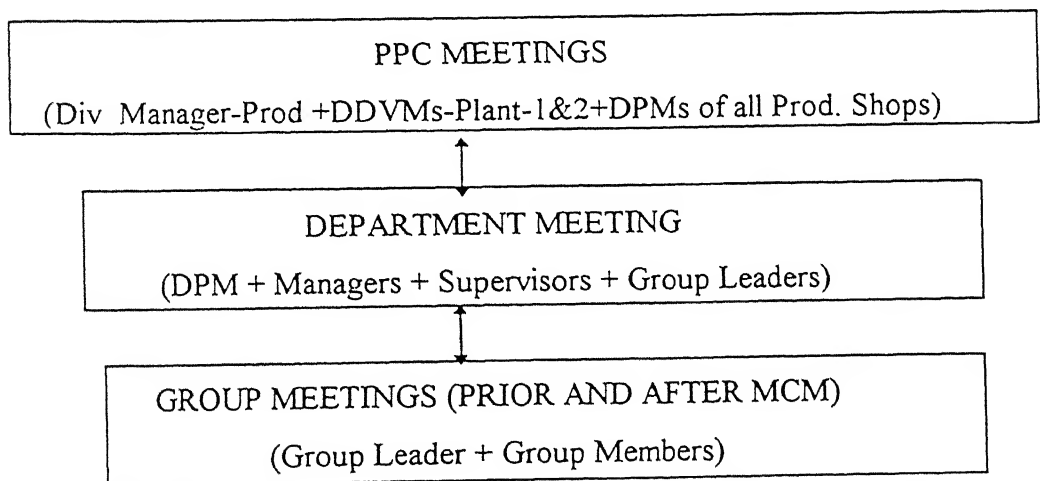


Figure 4.4.1.4B Information Flow Regarding Daily Production Issues

From 1995, JMD (Production & Planning) visits the plant and review each and every *Kaizen* in the plant and selects two best *Kaizens* depending upon :

- cost saving,
- ease of operation, and

- area of applicability. At each year end, in QUALITY MONTH committee of MD, JMDs and Executive Directors visit the shop floor and select ten best *Kaizens* throughout the plant.

Plant Audits :

Once every year, MD, JMDs, and Executive Directors do the plant audit. They visit each and every department and shop. A full checklist specific to each department, is prepared by the QS(Quality Department) department and given to auditors. These plant audits are being conducted from 1993 when efforts for ISO 9002 certification got underway.

Some objectives of the plant audit are²³ as follows :

- Whether the department has latest and revised quality manual?
- Whether the procedures as listed in the Quality Manual are being followed?
- Whether MOS (Maruti Operating Standards) and MIS (Maruti Inspection Standards) are being followed?
- Whether new-comers to the department are properly trained before being put to work?
- What is the level of awareness of importance of quality amongst workers?
- Whether equipments are calibrated?
- Whether feedback from customer is taken through dealers/service stations and what actions are being taken on it?
- Whether it is applying the countermeasures reported in QIRs raised on it by its customer department?
- Whether organization chart is there, with distinct duties assigned to levels?
- What is the position of production and other matters like QCs and Suggestions vis-à-vis department target which has been reached after rolling down the organization targets and what steps were being taken to meet the targets?
- What is the level of follow up of 5-S in the department?
- Whether the training plans and records are there in the department?
- What is the level of compliance to Quality Abnormality Dealing Procedures?
- Whether one can identify the materials in the shop?
- whether the material in the shop is traceable?
- What is the level of implementation of Design Changes?

²³ Taken from the company documents (CII EXIM Award Document)

- Review of the previous audits.
- Check for conformance to regulatory requirements.
- Whether system is upgraded for quality improvement?

More or less the INTERNAL AUDITS being done by QS department also has the same objectives and it uses the same checksheet as top management. The difference being the depth of investigation. Internal audits are done twice in a year of each department by QS dept. Some DPMs take pains to introduce their high performing technicians and supervisors during visits of top managers of MUL to their shops. In the words of DPM (EA shop), “The appreciation by JMD, during his visit to shops to review the *Kaizen* activity, to a person for the *Kaizen* done by him, really makes him proud of his work.” The workers in his shop also recognize his efforts in this regard. As a worker in the EA shop put it, “Our DPM is very conscious of our efforts and we get appreciated by JMD for *Kaizen* work more than our counterparts in other shops.”

When asked about effectiveness of the plant audit, workers from two shops - M/C shop and EA shop, recognized the emphasis of management during plant audit, on 5-S but they did not recognize the other elements. When asked about what the top management looks for in audits, they told that they generally look out for the follow-up of 5-S and conformance to the MOS²⁴. While executives and supervisors also acknowledge it, they point out to the auditing for follow up of the procedures. They also recognize the efforts of top management in auditing of actions taken to reduce the warranty claims²⁵. Managers, in addition to above, recognize the efforts in tracking the countermeasures reported in QIRs and trends in them.

4.4.1.6 Leading by Examples :

Managers at MUL take special care in acting first themselves on what they preach. One manager²⁶ instantly gave an example of attendance. Attendance has got top priority in MUL in the last few years. Attendance is very important for MUL regarding its efforts in increasing the productivity. Especially after second plant commissioning in 1994, it has been a case of do or die vis-à-vis the stringent production target. To counter the problem of absence, MCM has started monitoring it. One manager in Assembly Shop -I said that due to

²⁴ Talk with workers in M/C shop and EA shop.

²⁵ Talk with supervisors and executives in M/C shop and Assembly shop - I.

²⁶ Talk with a manager In QS department.

a lot of social responsibility, it is a fact that people are bound to take leave from work, so MUL has started advancing the idea of planned leave, i.e. absence with prior information to the department. This way, person incharge of line gets sufficient time to arrange the substitutes so as not to affect production. From the following data, it can be seen that managers lead the persons in this programme :

ATTENDANCE DATA FOR 1995-96

MANAGERS	95 %
SUPERVISORS & EXECUTIVES	91%
WORKERS (TECHNICIANS)	86%

Another example of 'leading by example', was presented by DPM (EA shop). Some times back, one worker got injured due to falling of an engine block on his head. In fact, he got only minor injuries due to the helmet he was wearing. Although it is always insisted that workers wear helmets all the time when on shopfloor, it is really difficult to wear them in the summers. So in the words of the DPM, " I and all the managers started wearing helmets whenever we were at shop and started promoting actively the use of helmet. By & by executives and supervisors, and then workers also started wearing helmets when on shopfloor. Now it is a pretty well established practice." Workers in QA shop, do recognize their manager's effort in this regard. Also the researcher saw majority of workers wearing helmets during his visits to the shop.

Also the management has made it a practice to stop the line for one hour every month to do QC activity in each shift. In a company where production is most important, keeping in view the market position of the company, stopping of line does send a strong signal that management is serious about QC. Similarly is the case with *Kaizens*. From his busy time, the act of JMD to review each and every *Kaizen* in the plant in every month, is really motivating for the persons doing them.

Sometimes the workers also test the commitment of the management towards quality. If the managers pass the test, it leaves an ineffable mark in the memory of the subordinates. One incident told by an EA manager is as follows²⁷:

²⁷ Talk with a manger in EA shop.

“A raw material’s last batch was in stock. It, being the last batch, was somewhat rusted and by appearance was not fit for use although no major problem was expected in the product , if this material were to be used in the production. The technician using the material asked whether he should use it or not. I knew that the technician is simply testing our following of preaching which we keep giving to them. So, to save the credibility of our preaching, I asked the technicians to stop the line and ask for another stock from MX-I(store).” Another case was explained by DPM, Engine Assembly Shop. “Different colored bearings (green, black, no color, blue etc.) are used in engine assembly crank case according to cylinder block bore and crank shaft diameter. Very minute difference in adjacent graded bearings is there but they do cause some problem if wrong bearing is used. We always preached and nearly exhorted workers to use right colored bearings. Once there was shortage of a particular colored bearing in the shop and it got prolonged. At that jiffy, as production of that particular model was to be kept on target in Assembly shop , no choice was there but to use another colored bearing which was of nearest in diagram as to the required bearing. At that time, for the fear of facing the question about right colored bearing, DPM & other manager did not go to the shop floor. When right color bearing supply was restored, the managers started to go to shop floor.” But, as DPM said, one could see the suspicion about manager's intention on the faces of supervisors and technicians, when preaching again about use of right colored bearing. This situation, in words of DPM- Engine Assembly, did send confusing signal about manager's commitment to quality.

4.4.2 Empowerment and Involvement :

According to a Senior Manager in Assembly Shop, empowerment means complete freedom in decision making with sufficient information to base. Empowerment implies any person to be able to take decisions about his work, like which material to use/reject, to pass/fail his produce after inspection etc. Every person has to know his/her responsibilities and work to do. He/she has not to ask his supervisors for directions. In words of DPM- Assembly shop, “MUL is downward - looking organization, not an upward looking organization.” Elaborating further, the same DPM (Assembly Shop) said that this thing has evolved over time. When MUL started production, it took its technology from Suzuki. So everything like specs. of the part to be produced, production rate, machine adjustment, material supply, pass/rejection of supply, pass/rejection of produce etc. had to be asked

either to Suzuki personnel (at MUL Plant) or to MUL personnel trained in Japan. So the basic structure of organization (communication) was upward looking. With time, more and more MUL personnel were trained in Japan and also MUL's training program for ITI trained persons for induction to worker levels prepared trained personnel to be included in MUL. Also with time, efforts were on to proceduralize and standardize the procedures, specifications and to spread knowledge of standard method of doing a particular job. All this cumulatively helped MUL to change its face to "downward - looking" organization. ISO 9000 provided a big boost to this face change process by proceduralization of processes, standardization of operating standards (MOS - Maurti Operating Standards and Inspection standards (MIS-Maurti Inspection Standards).

4.4.2.1 Jobs and Responsibilities at Ground Level : An Example of Machine Shop

In M/C shop, there are 16 lines machining a specific engine component for a specific model. Each line's personnel constitute one group. The FIGURE 4.2.1A shows the hierarchical levels in the M/c shop. The Inspector and Setter are identified among experienced workers. Setter has the responsibility of setting every M/C on the line and inspector carries out inspection, both 100% & sampling according to parameters. The workers who take initiative in learning jobs of setting the M/C in addition to his work is automatically the favorite choice to be appointed as setter. His initiative is specially encouraged. As one person who has become assistant supervisor put it : "In M/C shop, you are encouraged to handle more than one M/C due to shortage of trained personnel and MUL's concern about raising productivity. In that way you are trained at more than one M/C." The person gets opportunity of setting M/Cs in absence of normal setter. That way he is trained on the job, to become setter. Similar is the case with inspectors.

A typical group consists of 6-7 workers, one setter, one inspector and group leader. The group constitutes one QC also. So the group members are responsible for all the improvement works both through individual suggestions as well as through group suggestions. The group leader has the overall responsibility of day-to-day working of line, viz. assigning workers to machines, deciding about daily production rates, liaisoning with other departments like drilling section (for drills and tools) and MX-I (stores) etc.

The line I/C is of supervisor grade. He looks after general maintenance activities of 2-3 lines. He looks after the transfer of personnel from one line to another line (in case of

shortage of personnel) and liaisoning activities with support functions. They also have the responsibility of appraising the workers. Executives (engineers) look after engineering matters, M/C problems and quality problems etc. Managers and DPM decide about the daily production target of the department as a whole, inter-departmental problems (delivery/quality), departmental quality problems, and appraisals of supervisors and executives.

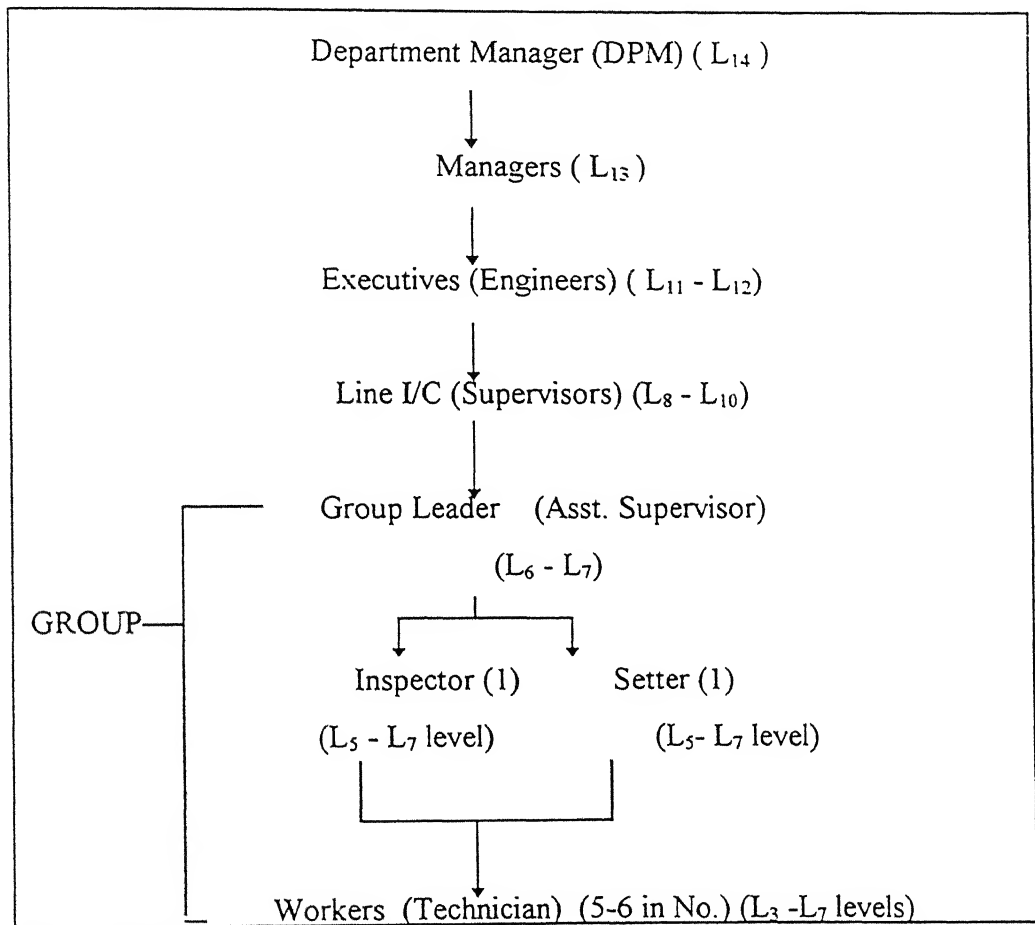


Figure 4.4.2.1A Shop Level Hierarchy in M/c Shop

4.4.2.2 Nature of Empowerment :

I. Workers :

A. Inspection of Self - Produce :

Technicians working on the line have to do certain amount of inspection of their production. In M/C shop, the pieces are passed under 100% inspection for some

parameters. These inspections are done by the technicians themselves who are working on line. After ISO certification, MOS (Maruti Operating Standards) have been formulated and affixed at each station according to its working. These MOSs contain very detailed instructions of what to do and what to inspect. Similarly there are MIS (Maruti Inspection Standards) about parameters to be checked and their permissible variance.

B. Onus of Improvement as a Mean for Involving the Employees :

Through Suggestions and *Kaizens*, the onus of improvement has been put upon the workers as they are the main pillar of suggestion schemes and improvement projects. As is evident from Section 4.3.3 (*Kaizens*), they are given full freedom in deciding the course of action, deploying resources etc. Workers convey that their supervisors are also involved in the improvement projects suggested by them. Supervisors view it as a major venue for involving the employees in their work area. The supervisors regard the efforts of their managers highly in providing financial resources which are in their authority and arranging those which are outside their authority. In evaluation process (of the improvement projects), the involvement of top management, they perceive, provide a sense of pride to workers as they feel that top management do care for improvement in their workplace.

II. Group Leaders and Line I/Cs :

The group leader's and line I/C's jobs and responsibilities have been given in Section 4.4.2.1. The line I/Cs have the power even to stop the line, but this power is delegated by the respective managers and so it is a sort of localized thing rather than omnipresent. When given specifically a situation of material shortage and availability of only bad quality supply (raw material) and asked about action, a line I/C in M/C Shop said that in presence of his manager or DPM, he will consult them and take the action. In the past in their absence, he indeed had taken decision like stopping the line based on past experience of similar situation in which bad quality products came out. He told that if any of decision had been wrong, then also the managers told him about the results of his decision and the facts. In fact, he further elaborated, one of his earlier DPM, who was now DVM of plant concerned, specially told us (the supervisors) to take decision. The DPM used to say that to learn the art of decision making, you have to take decision. The supervisor compared that situation with that in his past company Ashok Leyland where if any decision caused any loss to the

company, the person involved was severely scolded and almost no lower level person took any initiative in decision making.

III. Managers and Executives (Engineers) :

In M/C shop, managers' and Executives' jobs and responsibilities have been given in the Section 4.4.2.1. The managers and DPMs are quite independent in making decisions about the production targets, steps to tackle quality problems/warranty costs etc. and they take their input from top only regarding (internal & external) suppliers' capabilities and (internal & external) customers' requirement. Also in case of interdepartmental problems, DPMs and managers donot go to upper levels and they sort out the matter among them. In case of any problem with the external supplier, the DPMs are free to call them and discuss the problem.

4.4.2.3 Aids in Empowerment :

I. Timing of Shifts :

There are 2 shifts (7:30 a.m. - 4:00 p.m. & 3:30 p.m. - 12:00 p.m.) in each production Shop in MUL except M/C shop where all 3 shifts are being operated. Normally the Managers and DPMs come in general shift (9:00 a.m. - 5:30 p.m.). So there is a lot of scope of exercising discretion for the lower levels like line Incharges or Group leaders not only due to choice but also due to compulsion of not presence of managers at shops all the time during shifts.

II. Confidence in Subordinates :

A dimension of confidence came up as a requisite for delegation of authority. As one manager in Assembly shop summed up, "It takes certain time to build up a confidence that the person is able to take responsibility. Of course certain testing is always done to test the mettle of the person, but basically it is need-generated and localized type of thing.

III. Grooming for the Future :

Management willingly gives responsibility to lower levels to present them learning opportunities. As DPM (Quality System) said : "In Maruti, management started identifying persons' for career growth. In lieu of the rapid on coming expansion, MUL wants to spread the same culture as present plant to new plant. For this, personnel from the existing plant

will have to be transferred to new plant. MUL will have to fill the vacant position.” The critical personnel are Department Managers & Supervisors.

Managerial levels : For DPMs, MUL has started the practice of making one Manager in the department identified as capable, willing to take initiative, ability to go along with workers and willing to take responsibility, Incharge-DPM of that department. In effect, he is the number two man in the department. This practice has been started to cultivate future managers.

Supervisors : Similarly, for filling the position of supervisors, MUL has started appointing Assistant Supervisors from L₆ level workers. This practice has another reason also, for being started. The workers' salary levels in MUL are from L₃ - L₇. After 9 - 10 years of plant working, there were so many workers in the plant at L₅ level and there was no further opportunity for them. So, many of them tended to become complacent about the work after reaching L₇ stage. Earlier MUL was recruiting Diploma Engineers at L₈ salary level as Supervisor. Now this practice has been discontinued. Workers at L₆ level, identified as hardworking, taking initiatives, seeking learning opportunities, managing more areas, enthusiastic about suggestions and their implementation & *Kaizen* activities and in the last, following company policy of planned absence, are made assistant supervisors. They go to L₇ level as asst. supervisor and further (from L₈ level) designated as Supervisors. As DPM (Engine Assembly) said : "This is proving to be a major incentive for greater participation of workers in their work. As they know that we are increasing our capacity. So opportunities are unlimited. Now they know that they can wear blue cap also (for L₇ - L₁₂ levels). They are really excited. It is proving to be a major motivator. When in late 80s, there were no such visible opportunities, many workers did not take the work seriously. Now their career growth has stagnated as they have been upto L₆ and L₇ level without being identified as Assistant Supervisors. Although they will get their normal salary increments but they will have to work under their younger and more enthusiastic company workers who have been promoted to become Assistant Supervisor.” This policy was basically made to cater to the problem of motivating senior workers who are reaching towards L₆ levels and also to take care of further expansion which is in the offing. Also many Supervisors got transferred to Plant-2 which came in 1994 (in same premise). So there was a shortage of supervisors in Plant -I. So this policy of Assistant Supervisors was started to take care of further expansion which is in the offing."

IV. Reducing the Burden from Managers :

A Manager, in real sense, has to perform 3 types of tasks, namely Daily Maintenance (day to day management), innovation and *Kiazen*. By delegating day-to-day decision making, he can fulfill other 2 duties of innovation & *Kaizen*." Everyday, DPM conducts a meeting of his line I/Cs or supervisors to discuss about daily schedule on the basis of predefined target and any contingency and finally target for day's production is fixed. Then the I/Cs and Supervisors in turn conduct meeting of the workers in their line and discuss that target. That is only information that filters down from top. All other decisions like supply for line, quality of supply, rate of production, rejection/passing of product of line, has to be taken by the line I/C and line workers, themselves

V. ISO 9002 Certification :

ISO 9002 certification is regarded in the organization as a facilitating factor in delegation of responsibility and authority as it calls for delineating the responsibilities and authority at all levels in the organization. The full documentation of responsibility and authority can be utilized to find avenues for delegating the certain responsibility and authority. It has facilitated formulation of MOSs which have helped in imparting independence to the workers in working (see Section 4.4.2.2A). MOSs have been formulated by consulting the technicians who have been working on these operations for some time. As there are two shifts, so it is implied that two different persons will be doing the same job. When asked about whether working according to MOS affects your ease of working, a worker in Engine Assembly shop said that since in stage of formulating the MOS, worker was involved, so it does not create any problem later and whenever there was a conflict between two workers working on same M/C in different shifts, at the time of MOS formulation, after consulting both workers, a best way of doing that operation was devised. He further elaborated that in such cases, initially there were some problems but now they were accustomed.

4.4.3 Performance Appraisal & Reward System

4.4.3.1 Appraisals :

For appraisals, the organization can be divided into 2 groups:

For level $L_3 - L_7$, supervisor appraises the person's performance but the approval comes from DPM of the concerned department.

For level $L_8 - L_{13}$ DPM appraises the person's performance. All these appraisals are sent to Establishment and Time Office which has the overall responsibility of final approval of the appraisals and deciding about the career growth of the person concerned. It sends the appraisal done by initiating person to Department Promotion Committee. These are two committees for deciding about promotions. One is for levels $L_3 - L_7$. Its members are JMD, Director(Finance), DDVM(Per & Admn) and DDVM(Production). The second committee is for levels above L_8 . The members of this committee are MD, 4 full time Directors, DDVM(production) and DDVM(Per. & Admn). The annual appraisal of DPMs is done by DDVMs and of DDVMs and DVMs, by MD & Directors. The researcher will focus here on the appraisals and reward system for levels upto L_{13} . Upto 1994, the criteria on which the persons were being appraised were same for the two groups described above. But in 1994, it was decided to have two separate sets of criteria for each group as their responsibilities and jobs and expectations from them, are quite different. The criteria and weightages are given in Tables 4.4.3.1A and 4.4.3.1B for level $L_3 - L_7$ and then for level $L_8 - L_{13}$, respectively. For each criteria, in these Tables, the initiating person (like supervisor in case of $L_3 - L_7$ levels) has to rate the person on a scale of 10, then multiply the rating point by weightage and accumulate it. On the basis of these cumulative score, the person is graded as A/B/C/C-. Each grade has points associated to it and is given in Table 4.4.3.1C. The grades and associated points accumulate over with years and when they become equal or above the points required for promotion according to the present level of the person, then the person's attendance is considered. MUL has decided about the percentage attendance in the promotion year. Actually, this attendance criteria in the performance appraisal of $L_3 - L_7$ levels, was added in 1992. As explained earlier also, MUL has started giving emphasis on planned absence because unplanned absence creates unnecessary production delays on line. So if in the year of promotion, person's attendance is not upto the mark (criteria for which have been developed), his/her promotion is deferred for a certain period. Although percentage attendance is not a criterion in the appraisal of levels L_8 and above, it is considered in the promotion year and it is more stringent for them as compared to that for $L_3 - L_7$ level. The percentage requirement is given in the Table 4.4.3.1.D.

PERFORMANCE APPRAISAL FOR LEVEL L ₃ - L ₋	
FACTORS	WEIGHTAGES
1. Knowledge & Skill	
• Knowledge about the job and its application	10%
• Intelligence & ability to comprehend	10%
2. Quantity of Work	
• Quantity	10%
• Promptness	5%
3 Quality of Work	
• Rejection rate /accuracy	10%
• Neatness and tidiness	5%
4 Discipline	
• Attendance	5%
• Safety consciousness	5%
• Compliance with company rules and regulations	5%
5 Work Attitude	
• Initiative & commitment	5%
• Sense of responsibility & sincerity towards the job	5%
• Desire to learn	5%
• cost consciousness	10%
6 Teamwork	
• Cooperation with Fellow Workers	5%
• Cooperation with Supervisors	5%

Table 4.4.3.1A Appraisal Criteria for Technicians

PERFORMANCE APPRAISAL FOR LEVEL L ₈ - L ₁₃	
CRITERIA	WEIGHTAGE
Part 1. KNOWLEDGE & PERFORMANCE	
1. Professional ability	10%
2. Job responsibility	10%
3. Quality of work	10%
4. Cost consciousness	10%
Part 2. PERSONAL ATTRIBUTES	
1. Positive attitude	5%
2. Initiative	5%
3. Innovative thinking	5%
4. Communication	5%
5. Interpersonal relations	5%
6. Discipline	5%
Part 3. MANAGERIAL ATTRIBUTES	
1. Planning & organizing	10%
2. Decision making	10%
3. Leadership	10%

Table 4.4.3.1B Appraisal Criteria for Executives and Managers

GRADES	ASSOCIATED POINTS
A	15
B	10
C	7
C-	0

Table 4.4.3.1C Gradings and Associated Points

GRADES	ATTENDANCE REQ. FOR PROMOTION IN CASE OF L ₃ - L ₇ LEVELS	ATTENDANCE REQ. FOR PROMOTION IN CASE OF L ₈ - L ₁₃ LEVELS
A	>85%	>90%
B	75-85%	80-90%
C	65-75%	70-80%
C-	<65%	<70%

Table 4.4.3.1D Attendance Requirement for Promotions

The persons are told the measures on which they will be appraised in the starting itself while joining the company. In the early days of the company, MUL had a policy of self appraisal too. He had to rate himself and consequently he had to satisfy his bosses with his rating of himself. But, as one line I/C in M/C shop noted, "This process was very time consuming, so it was discontinued".

4.4.3.2 Feedback & Counseling:

While entering the given grade in the performance appraisal form, the authority doing the appraisal (Initiating Officer) is supposed to tell the person about his strengths and weaknesses. He is also burdened with the responsibilities of telling him the areas in which improvement is needed. He is also supposed to record the reactions (if any) of the concerned employee. Actual grades are not disclosed to the employee. But, as a group leader (of L₅ level) pointed, that during the course of counseling, the person being appraised does get the hint of his/her grade. A line Incharge in M/C shop presented an interesting aspect of it. He said, "Generally employees have intimate relationship with one or two of their supervisors. Through them, they get the information about the actual grades of them and then grades of every person become known. That creates both the positive and negative effects. If a persons has got an "A", it becomes his encouragement. But if a person has got a

"B", he tends to become lethargic and demotivated, though only a few days earlier, he was doing his best. So in my view, the grades should be guarded into secrecy strictly." In his view, the official policy of not disclosing the grade is due to fear of Union interference. He also disclosed a case. A person was a technician in M/C shop and he was also holding a post in the Union. His brother was taken as apprentice from ITI but after 2 years of training, when the persons were to be recruited permanently, his brother's name was not included. The brother of the apprentice (who was employee of MUL), interfered along with other union members and called for an explanation from management. It created a lot of stir in the department. Final decision was not to recruit the apprentice but the whole incident created a lot of problems in the shop. If a person is not satisfied with his appraisal, he can and does go to DPM/DDVM or to union also and put his case, but there is no official channel for pursuing such complaints. This is the major grievance of workers for which they complain to higher levels. When asked about whether there is any union interference in the appraisals, there were not clear answers. Manager denied it²⁸. Workers in the M/C shop accepted it. But the details about what type of interference, result of it, could not be got.

Whenever a person complains against the appraisals, he is counseled personally by a senior management of DDVM or DVM rank. After each year's appraisal, the DPM of each department is asked about the areas, in which his people are deficient and whether he needs some special training for his people. Accordingly, it is considered by training department while making ATP.

4.4.3.3 Reward System:

The reward system in MUL is related to 3 areas.

I Production Incentive :

The production incentive in MUL is linked to productivity. Every year, based on productivity reached vis-à-vis target, MC decides about the incentive to be given. After that, depending upon the department whether production/ related to production/unrelated to production and level whether L₃ - L₇ / L₈ and above. For example (this is the scheme which is in effect from 1.4.1995) :

- For L₃ - L₇ level of prod. dept. = 115 percentage of the decided amount.
- For L₃ - L₇ level related to prod. dept. = 100 percentage of the decided amount.

²⁸ Interview with a senior manager in M/C shop

- For $L_3 - L_7$ level not related to prod dept. = 85 percentage of the decided amount

The incentives for levels above DPM's, are decided by Directors of the Company and the researcher could not get hold of any information about it. The incentive scheme and its basis is formulated once in 4 years. Now it is planned to be done once every year. This has been necessitated by growing turnover of managers and supervisors from the company, as told by DPM-Est & Time Office. For levels upto L_7 , it is negotiated with the union. There is only one non-affiliated union in MUL and only workers are members of it. There is no union of officers/supervisors. Being a Company, in which government has 50 percent stake, MUL has to bear a lot of open dissension of union. In his one month stay at MUL, the researcher saw the union officials distributing pamphlets regularly at an interval of 2-3 days. Last wage revision was done in April 1995. But union is refusing to recognize it as it was not negotiated with the union. But the management says that it cannot negotiate with union of which 8 out of 15 officials are expelled from the union. Also due to stay order by Court, MUL was prevented from holding elections till a month ago and this order was rescinded only a month back. So MUL has not been able to hold elections, and negotiate with a new union. Workers also agree with the view of management. As a worker in M/C shop said, "Earlier union was representing our cases in good spirit and favorably but now they have got themselves in a mess and are working on tactics to malign the management for their internal problems."

The incentive basis now for $L_3 - L_7$ is -

-productivity improvement for the base year 1994-95, and

-bonus on this incentive based on profit. Due to the second criteria, it has become productivity cum profit linked incentive scheme. Earlier it was only based on productivity improvement. A change in 1992 also took place. Prior to 1992, the productivity was calculated simply by dividing number of vehicles produced in a calendar year by total number of employees in MUL. But after 1992, when expansion of MUL's production capacity by 1 lakh was started, it was thought upon by the management that productivity increase is not simply due to equal efforts of all employees. In order to increase productivity, MUL was specially trying to reduce the no. of employees in non-production areas, productivity was shooting up. So to account for real productivity increase, it started to calculate productivity as number of vehicles produced per direct labor. Due to automation etc., indirect labor had a decreasing trend. So it had an inflating effect on

productivity For the reflection of efforts of judicious management of direct labor, the formula was changed

II Attendance

Realizing the attendance as an important agenda to pursue on, MUL's MCM regularly discusses its trend It has also instituted prize for highest attendance The rewards are mainly monetary ones These are for highest attendance for the quarter, for the year and for 3 years in a row The person having highest attendance in a year and also the person having highest attendance in a row for 3 years, is given the certificate by MD himself on Independence day This award has been initiated after 1992

III SS & QCs and *KAIZENS*

They have been discussed under the respective sections (4 3 1, 4 3 2, 4 3 3)

In most of the awards, the content is both monetary as well as recognition personally by top managers But as a line I/C said "The opportunity to have tea with PM is important and not the tea " So the recognition by top management is more important than the monetary content It was expressed by workers also in M/C shop Management in MUL is trying seriously in recognizing the efforts of its employees, be it in increasing production or in assuring quality The JMD's personal visit to review each and every *Kaizen* presents an invaluable opportunity to have first hand interaction with workers and supervisors and to recognize their efforts DPM - Establishment and the office, view the awards for suggestions, QCs and *Kaizens* more important than production incentive The DPM said, "Personally I feel that the production incentive, being given for a long time now, have lost their meaning except that they constitute a major part of the salaries But awards for Suggestions, *Kaizens* & QCs are sort of recognition of personal or group efforts " Also , when asked why the Company is giving so much emphasis on monetary content of the award, DPM (PKC) said that there were so many awards in the Company that if they instituted only certificates/shields for them, they will loose the appeal (Although it may be just the opposite in reality.)

4.4.4 Inter - Departmental Relationship :

MUL as an organization is orienting itself as customer driven - all departments are becoming more or less market dependent for their performance. Prior to '90s, in a closed and protected economy, the situation was not so. Being in a virtual monopolistic market, all efforts of the organization towards betterment of quality of its products, were driven from inside or more specifically from the collaborator SMC. This affected the inter - departmental matters also. The inter - departmental matters were used to be solved at DPM or DDVM level in daily production meetings. Often, matters related to quality of material supplied by one department to other department were put on the backburner. The usual process of treating such matters was to inform the concerned department on a personal basis, either in meetings or on phone (it is still continuing for less serious problems in view of the person in-charge). Also, the affected department used to write the problem on a piece of paper and send it to the concerned department²⁹. This in itself shows the seriousness of the affected department in tackling the problem in their supplies. When the problem used to become of more critical and recurring, a QPCR (quality problem counter-measures report) was raised by the affected department on the department which supplied material to the former department. The department on which QPCR was raised, was not very prompt in responding to it³⁰. Most certainly they did bother take immediate actions to stop the recurrence of the problem in their production, but their efforts in finding root cause of the problem and being in touch with the affected department left much to be desired. Also, there was no system in place to track the process of problem solving. According to a Manager in Machine Shop¹, in some cases, the closing of QPCR took more than a month.

From 1993-94, instead of QPCRs, QIRs (Quality Information Report) were established. That was the time when efforts for ISO 9002 certification were in full swing in the organization. Whenever a customer department (using supply from some other department) has a quality problem, it analyzes it and determines (if not successful in analyzing, then speculate about) the cause of the problem. If it is due to supply of some internal department, it raises a QIR on the supplier department(s). By virtue of it being raised, the QIR has to be closed and information in this regard has to be given to the department which has raised QIR and all the other concerned departments. The internal (supplier) department on which

²⁹ Talk with the Quality Co-ordinator of Machine Shop

³⁰

the QIR has been raised, has to investigate the problem and take countermeasures. A crucial difference between QIR and QPCR is the interim countermeasure to be reported on the QIR. When a department receives QIR, it has to take and inform about the interim countermeasure within a day of raising QIR. When it fully investigates the problem and determines the root cause, it determines also the countermeasure and closes the QIR. The interim countermeasure typically is informing all the departments further down the line about the problem and advising them on adjusting steps. In internal audits, the auditing QS department prepare separate checklist for each department but few items figure out in each checksheet irrespective of the department. One of them is follow up of QIRs and response time. In plant audits also, the auditing team (MD, JMDs and Directors) takes special care to check the action on QIR, whether the reported countermeasures being taken organization not, what is the response time for interim countermeasure, etc. If any deviation is found, that is reported in writing and it becomes a major point for thorough auditing by the QS department. As one M/C shop executive noted¹, the system of raising the QIR has changed the whole style of dealing with the quality abnormality when it is due to internal departments.

Around 1995, it was decided to monitor the warranty cost arising due to department in the MCM (Management Committee Meeting). Whenever a warranty claim comes from dealer to service department, it is analyzed and if the part was developed in-house, an information is sent to the concerned department, which in turn traces the material, the production schedule, the person in charge of production of that batch, the line on which that material and takes the required action. For 1995-96, the machine shop had warranty cost per vehicle as Rs 6.17. Upto Dec. 1996 it has been Rs 7.28 per vehicle. In each MCM (Management Committee Meeting), the warranty cost trend for each department is monitored and discussed. This, in words of a M/C shop manager, has forced the respective departments to view the defects and faults having monetary value and inflicting harm to company books.

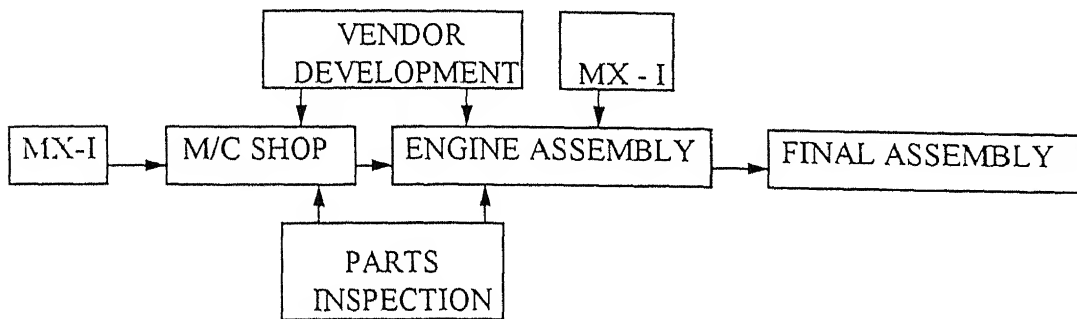
4.4.4.1 Machine Shop and its Relationship with Other Shops :

Machine shop has the responsibility of machining the components of the most basic mechanism of an automobile, its engine. The components being machined are

1. Block
2. Cam

- 3 Crank
- 4 Head
- 5 T - Case 3 C/L
- 6 T - Case G/R

What is distinctive about this department, is its process being just opposite of assembly shop. In assembly shop, the job moves on a conveyor belt and the technician has to work on it. But in machine shop, the technicians main work is to load the job in machine and machine does the job. Also almost all the supply of this department comes from outside suppliers. The customer(s) and supplier(s) of this department has been shown in the following diagram.



DEPARTMENTS' DESCRIPTION

- MX - I . Supplies vendor's material after inspection by Part Inspection. The primary responsibility for maintaining supply to the departments lies with it.
- Parts Inspection(PI) . It carries out the inspection according to MIS - P(Maruti Inspection Standards). It has the responsibility for maintaining the quality of supplier's supply.
- Vendor Development (VD) . Primarily it is responsible for contact with the vendors although it is not the only channel of communication with the vendor (For example machine shop can directly contact the vendor in case the vendor has not been able to understand the problem and M/C shop wants to show the vendor the conditions under which his supplies are being used. But in case the M/C shop experiences any quality problem, vendor development department has to first contact the vendor and devise countermeasures).

- Engine Assembly(EA) Shop The M/C shop supplies its produce to Engine Assembly This shop assembles all the engines for all the models of MUL It also gets its supply from MX-I

If M/C shop experiences any Quality Problem, it investigates the problem and tries to determine the cause of it It is due to material of supply, it raises QIR on PI department which in turn contacts the supplier through VD department VD raises QPCR on respective vendor The vendor has to reply with countermeasures and their implementation plan VD monitors the programme at vendor's end and PI keeps constant tab on Vendor's supply received These corrective actions (countermeasures at vendor's site) are informed to M/C shop and QIR is closed The problem at M/C shop are generally of two kinds - either related to quality or to delivery In case of delivery problem, no such system is in place to tackle the problem as in case of quality problem, but efforts with VD are carried out to plan in a better way, the material supply taking the vendor into confidence In case of some chronic quality problem, like unusual material hardness, personnel from M/C shop go along with the VD people to vendor's site to inspect the process there and devise the countermeasures This interaction with the vendor and the VD was started around 1990, but after ISO certification, the follow up of the procedure is strictly being done

M/C shop supplies its product to EA shop When questioned on the method of communication with EA, earlier prior to 1990, one manager of M/C shop recalled of receiving a green paper with complaint written on it or informally coming to M/C shop and talking to respective person in M/C shop prior to 1990 Now with QIRs in place, M/C shop gets QIRs when serious or recurring problems arise in EA shop Today also, informal communications are in place One person from M/C shop daily goes to EA and collects the rejects of the previous day The M/C shop executives analyze the problem and take corrective actions. Generally the fault is due to

- incoming material or,
- operator inspection failure &/or
- M/C problem As far as response to QIRs is concerned, according to quality co-ordinator of M/C shop, normally two days are taken for in-house problems and around 7 days for the problems which are serious or which are concerning suppliers EA, when asked about its relationship with M/C shop, was slightly disenchanted. One common problem was of recurrence of problems despite receiving full response, regarding corrective action taking in

the M/C shop One EA manager compared it with their relationship with Assembly shops (both 1&2) According to DPM (EA shop), "the relation with assembly is near perfect. Whenever a problem is reported from assembly, we immediately send one person at the place of trouble He analyses the problem and takes corrective steps or in case , the problem is complex he comes with all information and we try to solve problems in our shop In comparison to assembly(our internal customer), he said that relations with M/C shop is near opposite(our internal supplier) They don't send any personnel from their shop. immediately when apprised of a problem Also the same problem keeps taking place repeatedly, despite corrective action taking place on paper as reported by M C shop on QIR "

Both shops have dealing with PI and VD and through them with suppliers They convey a satisfactory feeling about response from PI, whenever a quality problem arises due to supply But in case of delivery problem, despite repeated talks with vendor and VD, EA assembly has been forced to stop one or two lines in past due to shortage of material But both of them realize that it is out of authority of VD as it involves external supplier

4.4.5 Supplier Partnership:

4.4.5.1 Starting & Consolidating the Vendor Base:

When MUL was started in 1983, no proper vendor base in the country was there which could help MUL in producing its technically advanced car by that time's standards in the country So MUL started diligently, developing vendor base The basis of choosing vendors at that time was as follows³¹ :

- response to advertisements,
 - past records and reputation,
 - audit result of audit carried out by MUL's personnel,
 - adequacy of capacity and willingness to revise it, and
 - technological capability (and willingness to invest in improving it)
- In the beginning, as many as 4 - 5 vendors were chosen for one item "Main reason was that, we did not know at that time, on whom to rely," said a manager from vendor development - VD department MUL extended training to their personnel and in some cases, financial support also After few years, when MUL became pretty well established in market, it started consolidating its
-

vendor base. It started cutting down the number of vendors for one item. The omitted vendors were mainly either non-performing ones or unsatisfactory ones. The consolidation was done in accordance with the policy of the company regarding number of vendors for each item. The official policy of the company regarding this is to have 2 vendors for each item. This policy has been in effect from around 1987. The reasons for this³² are

- (i) If a company has too few vendors (single ones), it is too dependent upon them and they can take it for a ride, which MUL cannot afford. For some parts, MUL does not maintain inventory of supplies. It directly feeds the material into line. So if suppliers stop the supplies, the lines at MUL will stop.
- (ii) If a company has too many vendors, it creates confusion and nonproductive competition between suppliers and there may also be cartel formation by them. Considering the natural calamities prevalent in the country, MUL also consciously tries to have suppliers for one item in two different parts of the country, for example, one in Madras and other in Delhi. Now if supply of supplier from Madras is stopped due to flood etc., MUL can always get material from Delhi situated supplier. Today, MUL has more than 390 vendors spread all over India out of which 90% are for items which are double sourced, and 10-15 supply items are single sourced and rest are multiple sourced.

4.4.5.2 JV With Suppliers :

MUL also has 12 JVs with suppliers. In all these JVs, MUL is either a minority stakeholder or equal stakeholder. Most of these JVs are situated in the company Campus at Gurgaon itself. These JVs were established-

- for parts which were critical/high value with large investments,
- for fast indigenisation (In all MUL's models, indigenisation level is greater than 80 percent), and
- to ensure right technology & quality being used in production of these parts.

The JVs of MUL are for the following components -

- Seats,
- Sheet Metal components, Fuel tanks and Axles,
- Sheet Metal Body and Muffler Components,
- Glasses for All Models,

³² Talk with Manager - VD-5

- Steering systems, Propeller Shaft, Differential Gears, Axles and Differential Subassemblies,
- Aluminum Radiators,
- Alternator, Starter Motor, Engine Cooling and
- Air conditioners

Most of these JVs were established to supply to MUL only and still their capacity is consumed by MUL only So no other customer for these suppliers is there Today. these JVs meet about 23% of total buying by MUL

4.4.5.3 Vendor Policy:

Each year, MUL formulates a vendor policy A draft is prepared after discussion of DPMS of Material Divisions with their DDVM and of PI with their DDVM This draft is then discussed in Management Committee (MUL) and finalized Typically it gives a direction about -

- what to do with erring suppliers/defaulting suppliers,
- what to do to increase their efficiency,
- what to do to remove need for inspection of receipts etc Like last year's policy was to discontinue relations with any vendor which has got overall rating below 85 percent If any supplier has got rating below 85%, he is told about that and asked to submit a time bound plan to increase its rating upto 95% If he fails to meet the deadlines and targets, depending upon analysis of case, he had to be given a further chance or relations with him had to be annulled

4.4.5.4 Development of Vendors³³ :

When a vendor is selected BY MUL to produce a certain part, he is issued with drawings and specifications.

I Specification Review Meeting

This meeting takes place before the trial production to discuss the specifications for the part, its usage environment and critical parameters. The process control standards and MIS-P (Maruti Inspection Standard for Parts) are finalized MIS-P are the parts inspection

³³ Taken from paper of Mr R. Dayal, Dy General Manager on Customer - Supplier Relationships

standards agreed between vendors and Maruti which specify the inspection to be done at MUL and at vendor's end

Packaging of parts is approved by MUL in order to preserve the quality of parts during transit from vendor's end to MUL and during storage. The packing specifications are given to the vendor during development stage.

II Sample Evaluation of Brought Out Parts

In this stage, the sample submitted by vendor to MUL, is checked for dimensional parameters, material composition, aesthetic requirement, functional and endurance testing parameters, fitment check etc.

III Trial Production/FPP Approval

First production parts (FPP) are submitted for trial in the production line. These parts are checked for fitment in actual assembly on line and are approved by using the production and inspection departments.

IV Mass Production/Incoming Inspection of Parts

This is carried out during production of vehicle by PI department of MUL. The components are inspected as per MIS - P.

V Change Implementation :

The vendor informs MUL about any change in the design of a part, manufacturing process, standards at their end and obtain approval from MUL before implementing the change.

Direct Clearance of Parts :

"We are working with a motto to do away inspection at our end of (suppliers') supplies. For that, we will have to ensure that vendors have acceptable process standards so that we can be sure of their products' quality and can directly feed their supplies into production without inspection at our end. Our theory is that since inspection does add to cost, it should be done away with," said a DPM (PI-2). Already more than 70 percent of the parts are not inspected at the incoming stage and are directly fed to the assembly line. Based on the past quality

record of the vendor and the confidence in the quality systems at vendor's end, parts are shifted to "Direct Clearance" category

4.4.5.5 Evaluation of Vendors:

Each year, every vendor of MUL is rated on the following basis

- (a) Quality Rating
 - (b) Delivery Rating
 - (c) Price Rating
 - (d) System Rating from auditing and
 - (e) Accommodation of MUL's requirement (subjective) (No points etc are decided for this)
- (a) Quality Rating It is calculated as -

Quality Rating = $1 - [(\% \text{ rejects at receipt section}) + (\% \text{ rejected at line}) + (\% \text{ rejects arising due to the rejects for which QPCRs \& MPCRs are raised})]$ It is decided on monthly basis

- (b) Delivery Rating It is equal to percent delivery coming on accepted schedules (Monthly)
- (c) Price Rating It is done vis-à-vis other supplier(s) for the same item It is done on the basis of price at which material is landing at company premises
- (d) System Rating It is done by vendor auditing departments from which rating is obtained about systems at vendor's site
- (e) The subjective assessment of accommodating nature of supplier is done by the DPMs of VD departments, who are dealing with specific suppliers

The overall assessment is done on the basis of all the above five factors cumulatively by VD

This overall assessment is used to decide the best vendor in each of the 23 technological groups All vendors of MUL fall in one or other group The top vendor in each group is awarded a shield. The award ceremony is attended by a selected group of distinguished and selected government and MUL officials and vendors For the last 2 years, Minister of State for Large Industry, has been coming to this ceremony As one manager in VD-I said "Our vendors rate this award very highly. They advertise in media that MUL has awarded us best vendor's award, and so we are the best producer of that material This helps them in gaining reputation and expanding their business "

Vendor Auditing :

Responsibility of Quality System Audit lies with VD-I (the vendor development department - I under Materials Div) At start of the year, VD-I, decides about the vendors to be rated in that year and divides the responsibility among VD, PI, QS and Engg A standard check sheet has been prepared by QS Dept , which these departments follow in auditing the vendors

The criteria for selecting vendors to be audited is their rating last year Each vendor is classified into A, B, C and D Category on the basis of its rating as given in the Table 4 4 5 5A Table 4 4 5 5B gives the frequency of auditing according to their grade

GRADE	POINTS
A	>80
B	65-80
C	50-65
D	<50

Table 4.4.5.5A Grading Points for Vendor Auditing

Rating of ISO 9000 certified vendors is also done if their rating is below 65% For these vendors, if rating goes below 65%, and a quality problem arises due to its supplies, a vendor audit can be planned by concerned department in consultation with DPM (VD-I) Auditing is done with an aim to ensure continuous supply of good components from vendors having business relations with MUL and upgrading the quality of parts by auditing the vendors Auditors identify discrepancies alongwith improvement required Auditors decide the counter measures alongwith possible implementation dates with vendor A typical vendor auditing check sheet is given in the Table 4 4 5 5C

GRADE	@ AND FUNCTIONAL PARTS (@-Safety parts)	GENERAL PARTS
A	ONCE/TWO YEARS	NO AUDIT TILL NEW PROBLEM
B	ONCE / YEAR	ONCE/TWO YEARS
C	ONCE/ 6 MONTHS	ONCE/PER YEAR
D	ONCE/4 MONTHS	ONCE/6 MONTHS

Table 4.4.5.5B Frequency of Auditing the Vendors

4.4.5.6 Communication With Suppliers:

A. Vendor Conferences :

Every year, MUL organizes three vendor conferences in different regions of the country These conferences are used as a forum for sharing important information and for an open

discussion on topics of mutual interest. In these conferences MUL vendors are also informed of advance production plan of the company. As one manager in VD-I said, "If MUL is planning to increase its production by next year, the vendor is told at least one year in advance to increase his capacity to meet our needs. We feel that he will need some time to raise his capacity." This helps vendors in planning investments and carrying out expansion plans to meet the increasing requirements of MUL.

S NO	CHECK POINTS
1	Does the vendor have documented quality system?
2	Does the vendor has necessary drawings for mass production?
3	Is vendor doing inspection for incoming parts as per standards?
4	Is vendor doing acceptance inspection for materials?
5	Inspection tools, gauges and fixtures are available?
6	Are operations standards and operations done as per these standards? Is Process control satisfactory?
7	Does he do first production labeling?
8	Is 5-S satisfactory?
9	Does the vendor perform routine check of production equipment?
10	Check whether the parts are satisfying MIS-P?
11	Does the vendor use batch code control?
12	Is rework controlled properly?
13	Does the vendor take necessary countermeasures for quality abnormality?
14	Does the vendor inform MUL whenever there is a change at his place?
15	If organization chart is available and proper training is given to employees?

Table 4.4.5.5C Checksheet for Vendor Auditing

B. Through MPCR & QPCRs :

MPCR (Market Problem Counter Measure Report) is raised by service department. When market complaints are received in the form of FTRs (Field Trouble Reports), warranty claims, technical report from expert markets, from dealers and MASSes and from Maruti's service engineers, service department analyses the problem and for serious/repeated problem, MPCRs are raised by service department on QA (for vendor part related problem) or on production departments (for in-house problem). QA sends the MPCR to vendor and asks for implementation schedule. Then it monitors, closely the implementation of counter measures reported in the MPCR. A rating of vendors, by service department is done on the basis of -

- no. of MPCRs raised on concerned vendor in the year,
- record of implementation of countermeasures by vendor, and

- responsiveness of vendor in responding to MPCR. The rating is included by VD in yearly rating of the vendor

QPCR (Quality Problem Counter measure Report) are issued by PI. Whenever quality problem is reported from the incoming stage or from line or from the market, PI raises QPCR to vendors. The QPCR is sent to vendor and PI asks the vendor to submit the full implementation schedule of the countermeasures and monitors the implementation of them. An yearly rating by PI is done of the vendors on the basis of-

- how many QPCRs have been raised on the concerned vendor,
- what is the record of implementation of QPCR by vendor and
- responsiveness of vendors in dealing with QPCRs. Whenever there is a QPCR/MPCR raised on vendor, help is provided by MUL to vendor in solving the quality problems by jointly analyzing and finding solutions.

4.4.5.7 Support to Vendors :

A. Technical Support² :

It is provided to vendor at all stages of the development of parts and during the regular supply stage. As noted earlier, support is provided to the vendor in development of product and process, finalisation of alternative material in overcoming initial quality problems, in providing testing facilities, in identifying the source for raw material of equipment/tooling etc.

Technical Tie-ups

MUL plays a critical role in arranging technical tie-ups for Indian Vendors with the corresponding vendors for SMC in Japan or from other countries. Over the last 4 years, 45 technical tie-ups were arranged by MUL for its vendors. In 1994, a new department, New Projects Department was specially created for arranging technological tie-ups for the existing vendors with internationally renowned component manufacturers for increasing the indigenisation levels and for improving the quality levels.

B. Quality System Support :

(I) Vendor Upgradation Cell in Vendor Development Department

This cell was established in 1991 in VD department. It voluntarily proposed to work upon improving the problems areas identified at vendor's end. When it was started, told the I/C of

this cell, “the response was not very enthusiastic from vendor's side. They shrugged off their responsibility of improving their system and became completely dependent upon VUC.” So in 1996, VCC (Vendor Consultancy Cell) under VD was formed and VUC was dismantled. The VCC exclusively gives service to vendors by charging for its services. There are now 6 small vendors in hand where work is being done by internal counselors from MUL. The project includes - productivity, bench marking (of units of same owner), system improvement and material handling. Also work at 5 big vendors are done with help of internal counselors. The areas on which work is being done there are material handling, quality system improvement, cost reduction, feedback on quality problem and communication problem etc. Since the cell is very new, so no comments could be obtained about its performance.

(II) ISO Assistance Programme by QS Department³⁴

To help the vendors in working for and obtaining ISO 9000 certification, MUL started Cluster ISO Assistance programme. Thus a cluster of willing suppliers was formed. The whole group shared all the costs of consultants and Auditors (of Certifying agency). MUL arranges for external consultants for these suppliers. From this year, a cell under QS Department has been formed to extend the consultancy and auditing facility to vendors. Now this will charge certain fee for its service. In this way, this department is hoping to become a profit centre in the company. Under its Cluster ISO Assistance programme, till now, more than 27 suppliers have been certified with ISO 9002.

(III) Quality System Manuals³

To help vendors in setting up quality system in their companies, various quality system manuals have been prepared by MUL and are supplied to its vendors. These include -

- Vendor quality assurance manual,
- Guidelines for quality systems/checks for plastics, sheets,
- Metal rubber, machining and spot welding,
- Guidelines for calibration of inspection instruments, and
- Manual for FMEA (Failure Mode and Effect analysis)

³⁴ Talk with QS department manager

(IV) QS 9000 Gap Analysis

After ISO 9002 certification, MUL is now encouraging its vendor to go directly for QS 9000 certification. So after ISO 9002 certification, QS department is helping in gap analysis vis-à-vis QS 9000 requirements to identify areas of improvement. The help of external auditor is being arranged for doing this.

C. Financial Support :

(I) Quick Payments³⁵

MUL has set bench marks in the automobile industry by having a system of making payments to its suppliers within 12 days from the date of receipt of material. This has greatly helped MUL's vendors in their financial cash flows and in supplying large volumes with limited financial resources.

(II) Cash Advances/ Inter - Corporate Advances

On a need base, MUL helps its vendors with cash advances to help them carrying out of their short term cash problems. MUL also provides its vendors with inter-corporate advances at very competitive interest rates.

(III) Arranging Equipment Leasing :

To catch-up with increasing expansion plans of MUL, its vendors have a lot of catch up to do. MUL arranges equipment leasing for vendors from leasing companies like IDBI/IFCI etc. These equipments are imported vendor EPCG (Export Promotion Capital Goods) Scheme at concessional customs duty with MUL taking export obligation on behalf of the vendors.

D. Identification of Sources for Raw Materials, Sub-parts and Sub-processes :

Quality of a manufactured product is affected to a large extent by quality of input raw materials and sub - parts. MUL has helped its vendors in identification of sources for raw materials and sub - parts. This has helped in improving and stabilizing the quality of the parts, establishing supplies and also in keeping a control on costs. For example, MUL buys

³⁵ Talk with a VD-6 manager

aluminum directly from NALCO and INDAL and supplies it to its vendors. Similarly MUL has identified standard sources for steel tubes, various plastic raw materials etc. and have advised vendors to buy from them to ensure quality of the end product.

E. Training of Vendors³⁶ :

To continuously improve the vendors, MUL organizes various training programmes for its vendors. Some of the training Programmes organized are -

- Gauge and inspection equipment calibration,
- ISO 9000 system,
- Statistical quality control,
- FMEA,
- QS 9000 systems, and
- Sheet metal working

Training trips to Japan are also organized for MUL vendors. They visit SMC's vendors in Japan and learn the latest practices and systems followed there. Also, on the job training is given to vendor's personnel by MUL's personnel when they visit the vendors. A major favoring factor with MUL is the proximity of its vendors to it. At least 70% of its vendors are situated within 80 Km radius circle drawn with MUL as centre. So their responsiveness to MUL's queries is pretty fast. Also development activities can easily be carried out.

Since more than 72% of turnover consists of materials and parts, the quality and price of car, to a large extent, is dependent upon quality and costs of vendor supplied parts. So MUL has been consistently trying to make them an integral part of MUL's operations. MUL's intense involvement with its vendors and continuous efforts towards their improvement has resulted in a formidable vendor base from a position of zero base in 1983. This is, today, proving a major competitive advantage for MUL vis-à-vis new competitors who are entering into the market now.

4.4.6 Partnership With Customers :

There are two groups of customers for MUL. The first is end customer which buys the car from dealer's showroom and the second is Dealer/MASS/Spare part stockist.

³⁶ Taken from the company documents CII-EXIM award documents

4.4.6.1 End Customer

A. Information Collection about Customer:

There are 2 types of information that are collected by MUL. One is about quality of its offering in product and after sales service. This is collected by service department. The second type of information concerns unfulfilled needs of customer from a car in the segment of MUL's offering, market perception of MUL's products vis-à-vis competitor's cars, marketing mix to be offered, effectiveness of advertisement and media of advertisement etc. This information is collected by marketing department. Marketing department collects information about customer and market by 3 ways

(I) Commissioned Research by Outside Agency (like MARG & IMRB etc)

This is done almost every year with different objectives as and when need for a particular type of information occurs. Some of the objectives of different market researches (in the past) have been as follows

- Contents of marketing mix,
- Test marketing of commercials & Advertisement
- Technological features in Esteem as wanted by users
- Market structure (consumer segments)
- Perception of MUL's Car vis-à-vis competitor's car
- Price preferences

As one marketing manager³⁷ noted, with hotting up of competition in lower segment of luxury car market in which MUL entered 3-4 years back with Esteem, MUL was forced to more aggressively search for exact consumer preferences. This can be seen from the fact that recently more market researches have been carried out about specific technological features in Esteem vis-à-vis CIELO. He further added that earlier we were more generalized in our research objectives like consumer satisfaction with existing technological features etc. Now MUL is also researching about new consumer's demand, income level of new consumer, whether he/she is shifting to car from two-wheeler, or is replacing existing car or adding one more car to his possession. With these type of researches, MUL is hoping to be proactive about market condition, as noted by the same marketing manager.

³⁷ Talk with marketing manager

(II) At Dealer's Outlet

Consumer is surveyed mainly about demographic representation and psychographic revelations like income level, choice of car, whether first car or second car etc. This data is collected either by MUL's executives at dealer's point or by dealer. The data is being collected from the beginning itself of the company's production.

(III) At Auto Exhibitions

With recent interest in auto exhibitions of both auto-makers and consumer, it is providing an ideal opportunity to get first-hand knowledge of consumer's taste. At these exhibitions, executives of MUL participate in collecting this knowledge.

B. Incorporation of Consumer Requirements:

Whenever marketing department collects data about some feature that market is demanding, it is presented to product development team which is composed of marketing and engineering people. This team debates about the feasibility of the incorporation of option. So this team basically acts as an interface between marketing and manufacturing. This team also evaluates the finances involved. Final clearance, of course, has to come from the management committee and the board of directors.

C. Models & Variants:

Except high end of luxury car market, MUL is catering to almost all types of needs of consumer. There are 6 models and total 17 variants of these. Starting from need of family car (800 cc & 1000cc) to off-road vehicles (Gypsy), from Chauffeur driven luxury car (Esteem) to self driven luxury Car (Zen), from low powered (off road) Gypsy to high powered Gypsy. So MUL has been trying to satisfy a larger number of customer segments.

4.4.6.2 Immediate Customers : Dealers/MASSES/Spare Parts Stockists:

MUL's products are sold through Dealers. So dealers play a very important role in customer satisfaction efforts of the Company. Also servicing is a very important aspect of automobile industry. This becomes very critical when it is considered that any body who buys a car, does not want any mechanic to experiment on it, in case of any trouble. Also, considering

the sophistication of MUL's new models in lower segment of luxury car market, availability of experienced service personnel becomes very critical

Quality in Service at MUL is defined as³⁸ complete preparedness at Dealer's site and at Service Stations, to satisfy whatever consumer demands. The dealer and service station should have an excellent awareness of company's systems to satisfy customer's queries and demands and whatever the dealer has not been able to do, he should be able to get required help of regional sales offices of MUL or control service stations

When MUL was started in 1983, customer base was very limited. Also, both people and mechanics were accustomed to Ambassador and Premier Padmini. Almost no mechanic/person was experienced to new sophisticated fuel efficient cars of MUL. So MUL started consciously developing dealer and service network. MUL has its 5 regional offices for sales and marketing at Delhi(North-1), Chandigarh (North-2), Calcutta (East), Bombay (West) & Madras (South). The contact of MUL with its dealers is via its regional offices. Now MUL covers more than 80 cities by its sales outlets. It also covers more than 380 cities by its service centres which are called MASS (Maruti Authorized Service Stations)

A. Selection of Dealers & MASSes :

For both Dealership & MASSes, advertisements are placed with specific requirements of covered space, uncovered space, locality, number of persons working, experience of employees etc. On these basis, the applications for MASSes are shortlisted and the awarding of MASSes is done according to MUL's priority. In case of dealers, financial strength of dealer is also considered. The dealers are required to deposit a sufficiently large sum with MUL as security money. The dealership & MASSes are appointed for 5 years period subject to mutual agreement of MUL & dealers & MASSes. While selecting dealers, Directors of MUL, short-list 2-3 applicant dealers for one dealership & the highest bidder of security money (to be deposited with MUL) gets the dealership.

While allotting dealership and MASSes, MUL tries to rationalize its dealer and service network. What is meant by rationalization, is proper concentration of dealers and service station so that it neither becomes too low or too high in an area. If it becomes too low, the customer will have to travel unnecessarily long distances for buying the Car/Service of it/

³⁸ As told by a manager- service dept.

getting spare parts of it. If it becomes too high, it will create unnecessary competition among different dealers/service stations /spare part stockists. Since MUL is still in process of extending its network, it wants to cover more and more parts of country. The rationalization is done with the following objectives³⁹

- Customer, anywhere in India, need not travel very far to buy a MUL's Car/its spares or get it serviced
- There should be healthy competition within dealer/MASSEs/Spare part Stockists to attract customer and to have customer orientation
- So that sales volume handled by each dealer remains within manageable limits and customer satisfaction is ensured

B. Development of Dealers/MASSEs :

As put up by an executive from service department, "MUL knows that its ultimate customer satisfaction will be decided by its product quality and its service quality, i.e., the treatment they get at Dealers/MASSEs/Spare part stockists regarding their various needs". So MUL emphasizes consistently improving dealers' facilities & MASSEs' skills. For the development of dealership and MASSEs, MUL undertakes following activities

(I) Training for the Personnel of Dealers & MASSEs

MUL has a service training Centre. It is burdened with the responsibility of training mechanics from Dealers and MASSEs. These are 3 types of courses being conducted for these mechanics :

- i) Beginners Training for Mechanics
- ii) Advanced Training for Mechanics
- iii) Advanced Training for Supervisors

For persons to come to any of the 3 courses, there are certain eligibility criteria in terms of number of years of experience, number of years of attachment to dealership/ MASSEs. But responsibility of conformance to eligibility criteria, is left to Dealers and MASSEs. Upon completion of training, a certificate is released in the name of Dealership/MASSE. Considering the growing sophistication in its cars, MUL is constantly trying to update the skills of mechanics of Dealers' and MASSEs' sites. It also organizes an "All India

³⁹ Taken from Company documents

Competition of Skill for MUL's Mechanics" By this competition, MUL tries to identify the level of competence of its mechanics. Also, by constantly sending technical reports, service bulletins etc. to Dealers and MASSes, it tries to update them on the latest technology and latest conditions/problems in the field. The details will be discussed under communication with dealers.

In addition to dealers' and MASSes' mechanics, MUL also provides training to Dealers' sales persons, to spare parts stockists and to overseas distributors at service training centre in Gurgaon and also at regional offices. This training is about sales and spares management. This training helps the dealers/MASSes/Stockists in providing proper service to customer resulting in higher customer satisfaction. Training data for the last 4 years is given in Table 4.4.6.2A.

(II) Auditing and ISO 9002 Assistance

Prior to 1990s, while selecting the dealers, MUL did not give much emphasis on maintaining a complete system for customer entertainment and Data Collection about Customers etc. Its main concern were space and bidded security money. It was opportune at that time, as in that period, the main concern of MUL was to spread its dealers' and MASSes' network as far as possible in the country. But now, as MUL has got sufficient coverage, it is going all out for its dealers and MASSes to have a proper system at their place⁴⁰.

Course	92-93	93-94	94-95	95-96
Training courses held for servicing	73	76	82	94
No. of Dealers/stockists attended spares training			80	100
Sales Training Courses held		11	37	42

Table 4.4.6.2A Data of Training of Dealers' and MASSes' Personnel

From around 1989, auditing of dealers was started. At the time of starting it, the stated objective was to choose 3 best dealers from each region and select best dealer in the country. But the unstated objective was to instill a sense of competition among the dealers.

⁴⁰ As noted by a service department manager.

and to benchmark their practices so that they can go for improving their facilities upto the best level identified that year "Also a spurt in the warranty claims necessitated it, as we wanted to find out the basic reasons behind that spurt and check it," said a service executive Now MUL is also encouraging its dealers to go for ISO 9002 certificate Already 5 dealers in the country have been certified When a dealer agrees to go for certification, QS dept , in collaboration with personnel from the regional office, under which the dealership comes, go to the dealer's site and conduct gap analysis to identify the tasks to be performed to get certified for ISO 9002 Then, when dealer reports that it is ready, QS Department again audits it to assure that certifying agency will certify it in first attempt Then MUL arranges for certifying agency and assist the dealer when audit by certifying agency is carried out

C. Performance Monitoring :

(I) Performance Monitoring of Dealers

Service department has devised certain parameters, which tell MUL about the performance of its dealers and MASSes The data for the last 3 years has been given in the Table 4.4.6.2B In addition to the above parameters, certain indicators, like absorption ratio are also used to infer about dealer's health.

Absorption Ratio It measures the profitability of dealership It is equal to percentage of total dealership's expenses which are met through gross earning from sales of spare parts and accessories and from after sales service It reflects the robustness and resilience of dealership operation These are in the interest of MUL If dealer is healthy (financially), it will help MUL in expanding the business Absorption ratio is a measure of dealer's satisfaction with business and from 1994, MUL collects every quarter's data

(II) Monitoring Delivery Performance in Domestic Markets

There is a very long waiting list of customers for 800CC & Omni (Like at present it is around 2 months for Omni). So mainly consumer complaints arise regarding this matter only. Due to heavy demand, it was identified, that certain persons were booking in clusters and then they were reselling the vehicles at high cost So the ultimate customer was aggrieved. To stop this, MUL has taken certain action These are as follows

informed to dealer quickly through bulletins and circulars. This section also collects PDIs (Pre Delivery Inspection Reports) from Dealers. Dealers are required to carry Pre Delivery Inspection for Vehicles for

- field testing &

- appearance (no dent, paint quality) etc. Through collection of PDI, the department ensures that dealers are carrying out predelivery inspection and it also gives information about any damage in transportation etc. and any need for repairing etc.

MUL also organizes annual conference of Dealers and MASSes to have face to face interaction with them by top management. Details of some of these conferences are as follows

(I) All India Dealer Conference

All India Conferences of Dealers. Its stated objectives are listed below

- to hear complaints by Dealers,
- to communicate the plans of company regarding models, expansion of capacity,
- to communicate general business condition in Car Industry,
- to obtain feedback on company plans for next 3 years. In this meetings, certain useful facts have come out in past. For example, in 1994 conference, the complaint from dealers was that no feedback was being given on Field Trouble reports (FTRs) (based on trouble faced by vehicles in the field) sent by them. So, a quarterly feedback system was started. In 1996 conference, a suggestion came out from dealers, that MUL should assist the sales force by providing them with technical inputs of competitors' products. Same has been started⁴¹

(II) Annual Regional Dealer Conferences :

Once a year, in every region of sales network of MUL, regional Conference of dealers of that region, is organized. Since in India, there are drastic differences in one region vis-à-vis other regions. So it was thought to start having regional dealer conferences. These facilitated deeper investigation into feedback from dealers and review of each and every dealer's performance.

⁴¹ Taken from company document.

PARAMETERS	1993-94	94-95	95-96
Vehicle Population	9,24,431	11,09,587	13,59,073
Workshops Existing	DEALER 128 MASS 670 TOTAL 798	135 680 815	165 692 856
Service Bays Available (2 7x5 sq metres covered area)	4774	4927	5516
Service Load / Month	138,627	154,902	183,137
% capturing of Service Load	DEALERS 23% MASSes 40% OTHERS 32%	27% 37% 36%	28% 34% 38%
customer complaints per 10,000 vehicles serviced (dealers)	37	26	26
Time taken for returning a complaint(days)	26	19	18

Table 4.4.6.2B Monitoring the Performance of Dealers and MASSes

(III) Works Managers' Meeting

Twice a year, in every region, there is a meeting between Works Managers and Spares Managers of Dealers and DPM of Service Department, of Spares Department, DDVMs of Service and Spares and Executive Directors of MUL. Here, after - sales service issues are discussed and feedback is obtained for necessary actions. For example, in Southern Region Meeting in 1994, a problem was raised of state of pre-modified struts of OMNI Model when already the modified version had been introduced. Management decided to take back all such struts.

(IV) Annual Spare Parts Stockists' Conference :

Once a year, this conference is organized anywhere in India. There, the problem in stocks of genuine MUL parts, consumption patterns, specific to models are discussed. In 1995 conference, the problems of credit sales was raised by stockists. So management decided to provide credit sales against bank guarantee.

In addition to these Conferences, MUL personnel, also visit the dealers. These visits are conducted with a view -

- to better understand market condition,
 - to better understand customer requirement and his/her satisfaction,
 - to decide about necessary action to be taken,
 - to meet market requirement better,
 - to decide about the steps required to increase the sales and
 - to improve after sales service and Maruti's genuine parts availability⁴²
- Visit reports by the visiting personnel are prepared and necessary actions are initiated for achieving customer satisfaction. In the free service camps organized by dealers and MASSes, if requested, MUL send its service engineers to have first hand experience of field problems. Also from 1994, MUL started sending supervisor and executives from production department to these service camps and also to dealer's sites to gain first hand experience of customer wants and complaints and field troubles. Like last year, some technicians and supervisors from Assembly shop - I were sent to field⁴³

E. Information Collection About Quality of Service :

If a company does not have feedback on its efforts, there can be no improvement possible. MUL also follows this line. So it actively tries to elicit as much information from customers as possible. In addition to information collection about consumer requirements and field conditions indirectly through different conferences with Dealers/MASSes/Stockists, MUL also tries to conduct surveys directly on final customer to get information about service quality. This survey is in addition to surveys done by marketing department (discussed under Section 4.6.1.1). MUL monitors certain parameters to gauge the conditions about service quality.

(I) CSI (Customer Satisfaction Index)

From 1993, MUL has been conducting a survey at dealers' site for gauging customer satisfaction with service provided by dealers. In 1993, a brief survey of 50 customers was done to identify what the customer thinks necessary for dealers to satisfy them. Then 7 parameters were identified. These are :

- i) understanding problem and taking road test,

⁴² Taken from the company documents.

⁴³ As told by a manager from M/C shop.

- ii) giving and adhering to schedules,
- iii) spare parts availability,
- iv) quality of work of mechanics,
- v) cleanliness of work,
- vi) road test prior to delivery, and
- vii) post service follow up

From 1993, each year, the service personnel from each regional office, visit the dealers' site falling under their regions and conduct a survey on the customers coming to dealers' site. The result for the last 3 years have been shown in the Table 4.4.6.2C. It can be seen that there is a constant decline in CSI. When asked about its reasons, a Senior Manager, Service department, gave the following reasons:

- Increase in production volume (so increased service load),
- Not matching the requirements, so shortage of genuine Maruti Spare Parts, and
- General increase in customer expectations due to launch of premium products like Zen, Esteem etc. Dwelling further on the issue, he told the actions, which MUL has decided to take. MUL has identified that it has to improve the efficiency of dealer workshops, to increase spare parts availability by MUL and to expand the service network based on strategies devised.

Parameters	93-94	94-95	95-96
understanding problem and taking road test	87.3	77.7	70.3
giving and adhering to schedules	94.3	78.5	73.2
spare parts availability	78.9	73.5	76.9
quality of work of mechanics,	73.2	68.2	69.9
cleanliness of work	67.1	73.6	74.6
road test prior to delivery	84.2	64.6	65
past service follow up	63.9	58.9	49.2
Over all	82.12	71.76	68.6

Table 4.4.6.2C Data of Last 3 Years' CSI

The ground action that has been taken are

- past-service follow system started,
 - usage of protective seal in vehicles during service,
 - computerization of workshop operations,
 - final inspection of vehicles after service, and
 - repeat job analysis
- From this year, MUL has given the responsibility of doing their survey to an independent external agency. The target is to achieve overall CSI of 90% in 3 years.

(II) Consumer Complaints

There has been a separate section for dealing with customer complaints in the service department. For every customer complaint that reaches the regional offices or MUL at Gurgaon, an account in the name of customer is opened. The complaint is analyzed and either action recommended is sent to the regional offices which in turn asks the nearby dealers to contact the customer and take the action on his cost, or if the problem is severe, then MUL's service engineers are sent personally to customer's place. Then the report of action is sent by either dealer/or service engineers respectively. Finally the account opened in the name of the customer is closed, but the data is stored. Depending upon the nature of complaint, service department ask for assistance from QA, PI, VS and Production. There are two type of complaints :

(i) Regarding Product Quality - It is sent to regional office which deals with the problem through dealer or MASS

(ii) Regarding service at Dealer's site/MASS's site - This is the complaint regarding service by dealer or MASS in case of unsatisfactory service, rude behavior, overpricing and not getting MGP (Maruti genuine parts). A particular type of complaint that comes, is warranty claim immediately after the expiry of warranty period. The service department decides, upon it case by case. The general trend is to accept customer demand to check bad mouthing and maintaining company's good image ⁴⁴. These type of complaints are recorded by service department which then contacts regional office. Regional Office tries to pacify the customers by taking appropriate actions. No details regarding this could be found out by the researcher.

⁴⁴ Talk with an executive from service department

(III) Feed Back Card

The technical information section in service department sends a free postage feedback card signed by Executive Director-Engineering, to all the customers buying a MUL car. General percentage of receipt of filled cards is 30%. These filled feedback cards are analyzed to get information about

- problems coming in newly bought car,
- demographic profile of customer and
- requirements of customer which are specific to region etc. This information is used by QA, production and marketing departments.

(IV) Warranty Claims

MUL has a policy of giving warranty for a period of one year or upto 20 000 kms, whichever occurs first. Whenever a customer claims warranty at dealers outlet, dealer takes action on the basis of genuineness of the claim and if he accepts it, he has to send both the claim form and faulty parts to warranty section in service department. The faulty part receipt in service department fulfills two purposes

- (i) checking the genuineness of claim &
- (ii) QA's inspection of faulty product which generates useful information to be acted upon by the concerned departments

CASE ANALYSIS

5.1 Introduction

This chapter covers the analysis of the case presented in Chapter 4. The case study of MUL was undertaken to understand the process of TQM implementation in manufacturing organizations. In Chapter 2, seven dimensions from the literature were identified, changes in whom are important from the point of view of success in TQM implementation. The seven areas covered are as follows:

- 1 Commitment of the Top Management
- 2 Empowerment and Involvement of Employees
- 3 Group Activity
- 4 Performance Appraisal and Reward System
- 5 Inter-departmental Relationship
- 6 Partnership with the Suppliers
- 7 Customer Orientation

Since the case, MUL, is relatively young and it had started TQM programme from the beginning itself, so the case attempts to bring forth the changes in the above dimensions which have taken place with the evolution of the company. The research framework (refer Chapter 3) discusses about identifying the changes in the seven dimensions and company's progress in these areas. Also, it is important to evaluate the changes. One method of evaluating the changes and company's progress is comparison of company's progress with ideal situation of TQM (prescribed in the literature). The ideal situation can be deemed as a goal which the organization is trying to achieve. It has been attempted in this chapter to bring forth whether the company has moved towards TQM in each of the above aspects. Another way of evaluating the changes and company's progress, is in terms of views of the different constituents. Since the study considers only internal environment, the constituents that have been taken under consideration are as follows:

- 1 Top Management (from MD - DDVM level, See organization chart in APPENDIX-E)
- 2 Middle Management (DPMs and Managers)

3 Supervisors and Executives

4 Workers (technicians)

The effectiveness of a programme can be judged in terms of what the different constituents participating in the programme think about it. The analysis tries to cover the constituent analysis also.

In the analysis, the first step has been to draw the chronological progress of MUL in each of the seven dimensions. The second step is of constituent analysis which has been carried out only in the first four of the seven dimensions, namely

- 1 Commitment of Top Management,
- 2 Empowerment and Involvement,
- 3 Group Activity and
- 4 Performance Appraisal & Reward System¹

In the third step of analysis, the progress of the company has been evaluated in terms of how much it has moved towards the ideals of TQM as described in literature survey (Chapter 2). The fourth and last step has been to explain the differences between the different constituents in areas where constituent analysis has been carried out. It has also been attempted to explain the effect of difference of opinions upon various steps undertaken by the company regarding TQM programme.

5.2 Commitment of Top Management

The progress of the company has been charted out in Table 5.2A. Table 5.2B gives the cross-constituent analysis. Further analysis steps (explained in Section 5.1) produce the following points:

- 1 With progress and evolution of the company, the production oriented performance indicators have given place to quality oriented and then to market oriented. This is in line with the efforts to make the organization market oriented. For example, in starting the indicators were number of cars produced, productivity, etc. Later, average defects per vehicle, cost of defects, etc. were started being monitored. Further to orient the company towards market, CSI, Quality reports from PI and service, No. of vehicles

¹ In the other three change areas, namely Inter-departmental Relationship, Relation with Outside Supplier, and Customer Orientation, constituent analysis has not been carried out due to non-existence of workers' and supervisors' views which is evident from Sections 4.4.4, 4.4.5, and 4.4.6.

1984	Providing resources for quality improvement - technical training (for absorption of technology) & financial resources
↓	Removing communication barrier - common dress /common canteen/open office
↓	Establishment of performance indicators for steering the quality programme (production oriented → quality oriented → market oriented)
↓	Sharing information - new programme/ production data/ company performance **
1992	Providing goal to the organization (when company ceased to be a Govt Company) - Vision/Mission
↓	Providing a guideline (Quality Policy) for employees to be followed in daily work
↓	Plant Audit - First hand experience of shop floor condition & Visible involvement
↓	Direct and regular contact with suppliers and immediate customer
↓	JMD's review of each and every <i>kaizen</i> - an example of visible involvement

** Lack of feedback in any communication- only one way information flow(top-bottom)

Table 5.2 A Chronological Progress of MUL -Top Management Commitment

	Top Management	Middle Management	Supervisors	Workers
Information Sharing	Relevant and sufficient information to lower levels	Relevant and sufficient information to lower levels	Relevant and sufficient information to lower levels	Agreed with view of upper levels but now some information (provided earlier) is not being provided and so dissatisfied
What management wants to convey"		Plant audits emphasize on QIRs. Warranty and follow of procedures	Plant audits emphasize on follow of procedures and 5-S	Plant audits emphasize on follow of procedures and 5-S
Vision & Mission	Vision and mission's awareness to lower levels	It is not necessary for lower levels to know them	Don't see importance of it	Don't acknowledge importance of it and have heard only names of them
Quality Policy	Quality policy tells the employees about general guidelines to be followed in their work	Agree with top management	Don't realize how quality policy affects their work	Agree with supervisors

Table 5.2B Constituent Analysis : Commitment of Top Management

serviced per day etc were included in the list of indicators being monitored Latest entrant has been warranty cost This has been successful, in sending a strong message to lower levels in the organization as to the cost of their faults that the company is paying So the management has tried to drive down the importance of issues through tangible indicators, which is along the lines of TQM

- 2 As can be seen from Table 5 2A, company started creating openness in the organization fairly from the beginning That it is regarded highly by workers and it is acting as a major channel for venting the grievances, is evident from Section 4 4 1 3 As communicated under Section 4 4 3, there has been no formal channel in the organization, still the workers and supervisors do not feel the need of it as they regard the internal environment of the company so open that they can approach any higher level in the organization for their problems
- 3 Information is shared and it is facilitated by openness in the organization but union problem has affected it to a certain degree There is difference in workers' views with other constituents regarding withholding of information (which was earlier provided) As brought out by constituent analysis (Table 5 2B), prior to union problem (in 1994), sufficient information was being provided but after union problem (as perceived by workers), some data about productivity (on which incentive is based). is being withheld and it is creating dissatisfaction among the employees
- 4 The literature says that vision should be made part of everybody's life but it has not been followed here If it would have been here, company would have tried to align employees' goals with vision and mission of the company and a company wide thrust could have been generated The view of top and middle management (Table 5 2B) has been just opposite to what has been in the literature and past history of the companies In successful companies, vision has been used to concentrate the employees' energy towards achievement of vision (see Chapter 2, proposition 1) Lower levels, as is coming out from the constituents analysis, do not realize the importance of knowing vision as they are not privy to experiences of other companies who have successfully experimented with vision, and they are not even introduced to the concept Similar has been the case with quality policy also The aim of quality policy formulation, as listed in literature, is to provide a general guideline to employees under which they should take their decisions But the constituent analysis brings out that management has failed at this

front as lower levels in the organization do not even realize the importance of quality policy, leave the issue how it affects their work. Lack of feedback from lower levels has hindered its realization.

- 5 As far as providing resources is concerned, the employees are satisfied with the provision of financial resources, but it has not been the case with skills' imparting. When technology absorption was the issue, technicians and supervisors were provided adequate training but of late, the self set target of 17 hours of training per year to each employee, is not being met and it is a typical case in the company in which the expectations of employees were first enhanced and later left far from satisfied. The training serves here two purposes - it breaks the monotony of daily work and it updates the skills. So, at present, both the purposes are being hurt.
- 6 The involvement should not look like an interference, like in case of latest move of the top management (providing areas for problem search by QCs). The difference between different constituents' view (Table 5.2B) is due to lack of feedback from the affected employees. Management has failed to properly communicate the need of the move and to take into account what technicians and supervisors think.
- 7 The lack of feedback is also diluting the thrust of management regarding what should be communicated as important issues. As brought out in the constituent analysis, the three constituents feel differently about what management is trying to communicate through plant audit. This difference of views across the constituents is sufficient to reduce the plant audits' effectiveness. But these plant audits serve a major purpose, that is, of maintaining contact between top management and lower level of organization.
- 8 The leadership traits are not cascading down to lower level (supervisors). They only act in communicating what management says. This may be due to the fact they are not trained for it. This also highlights the fact that there is no system in the organization for detecting such needs.

Summary :

The analysis shows that although the management has been able to communicate to lower levels about the importance of certain issues, to show its commitment and in maintaining open internal environment but lack of a feedback system has failed MUL's management in realizing the ineffectiveness of certain moves like Quality Policy, training etc.

5.3 Empowerment and Involvement

Table 5 3A gives the steps that the company has taken with its evolution, towards involving & empowering the employees. Constituent analysis, to bring forth the diversity of opinions among different constituents, has been presented in Table 5 3B. Now the progress of the company and its advance towards TQM has been analyzed below. Also analyzed is why the different constituents have diverse opinions.

- 1 The major means being used in the company, for involving the lowest level of employee, are suggestion scheme and *Kaizen* activities. These programmes have been successful in the sense that they have been able to generate commitment from workers. As brought out in the case (Section 4 4 2 2 and 4 4 2 3) and constituent analysis (Table 5 3B), that independence in working of suggestion schemes and *Kaizens*, has been identified as reason for its success. So company has been able to involve employees in quality improvement activities by giving them free hand in such activities.
- 2 As brought out in the case (Section 4 4 2 2), and Table 5 3A, the real empowerment in MUL has been from group leader level (refer Figure 4 4 2 1A). The efforts have not been undertaken to empower technicians' levels or at least making them feel empowered.
- 3 If it seems from the constituent analysis (Table 5 3B), that workers do not perceive the need for any empowerment, that is because their work does not seem to offer them avenues for empowerment. Expanding areas of work, as has been going on in the company (evident from example of Setters under Section 4 4 2 1), may be advantageous for the company but without authority to make decision about the matters related to their own work, this job enlargement does not mean anything.
- 4 There is a clear indication from Table 5 2A and Table 5 3A and Section 4 4 2, that the involvement has been in only those areas which are not controversial, i.e., those matters which are directly related to work. Against the suggestion of literature that there should be involvement of employees in their appraisal and reward system, it is not there in the organization. So the company has kept the involvement of lower levels in areas which are directly related to their work and not related to 'controversial' areas like appraisals. For example, there was involvement of technicians in MOS formulation as it must have been realized on part of the management that without contribution of person doing the

1985	Suggestions and QCs - early means for involving the employee in his job
↓	Training to facilitate the delegation of responsibilities to lower levels
↓	Group leaders - lowest level for whom planned empowerment
1992	Efforts for ISO certification - involving technicians in MOS formulation
↓	Control to technicians to work according to MOS and take decision about their work
↓	On-the-job training - learning opportunities to I/C DPMs and asst supervisors
↓	Alignment efforts regarding training programme but not fulfilling targets due to production constraints and so dissatisfaction among technicians and supervisors

Table 5.3A Chronological Progress of MUL -Empowerment & Involvement

	Top Management	Middle management	Supervisors	Workers
Efforts towards empowerment	Conscious efforts to make organization downward looking through proper training	Delegation of authority and responsibility depending upon the confidence in subordinate and so it is localized	Sufficient freedom in day to day working as management can't do each and every job	No overt communication of need of any type of empowerment
Career planning	Conscious career planning - I/C DPMs and Asst Supervisors - learning opportunities given through delegation of responsibility and authority	Agree with top management's view Also identification of asst Supervisors among workers - major source of motivation to them	Learning opportunities are provided to asst Supervisors to help them learn the job	Agree with supervisors

Table 5.3B Constituent Analysis : Empowerment & Involvement

job, it cannot be expected that he² will be doing the job along the documented line but the company has been abstaining itself from touching those areas which can create trouble. This feeling has got strongly firmed up in the minds of the lower levels. By restricting itself, organization is not utilizing the natural avenues for involving the employees. Further discussion about involvement in appraisal system has been given in Section 5.5

- 5 Imparting skills is the first step towards empowerment and lack of training could be a hindering factor in empowerment. Also with the policy of the company to promote to managerial and supervisor levels from among its executives and workers respectively, delegation of responsibility and authority is necessary for providing learning opportunities to the person being promoted. With major thrust of training policy of the company being on-the-job training, delegation of authority and responsibility is necessary. This has been going on in case of Asst supervisors and I/C DPMs. But the company has not been doing anything to provide any on-the-job training to workers which have not been still identified as Asst supervisors.
- 6 Also, in the name of empowerment of workers, what has been actually going on is job enlargement without any delegation of power or expansion of decision making power. This is evident from the example of setters and inspectors in Section 4.4.2.1. This is creating a situation of increased responsibility but not authority.
- 7 A lack of concerted effort towards delegation of power to lower levels, is hampering the empowerment and it is still dependent upon the personal initiative of a manager. This personal initiative on the part of a manager, is dependent upon the confidence that the manager has in group leader under him. This lack of concerted effort is hampering whatever empowerment efforts are going on in the organization. Lack of efforts towards empowerment is also due to its absence from the agenda of the top management. What is coming out of the case is that it is not regarded as an element of TQM by top management. It thinks that by giving independence to employees in quality improvement activities (Suggestions, *Kaizens*), it has undertaken sufficient empowerment of workers.

Summary :

² Since majority of personnel in the organization are male, so only masculine pronouns have been used in the Chapter

The above analysis clearly points out that training is the first step towards empowerment but empowerment has to be regarded as giving control of one's destiny to employees with clearly defined decision-making boundaries. The success of Suggestion Schemes and *Kaizens* and factors behind the success - independence in working - could have been considered by managers to provide more autonomy to individual workers. From the constituent analysis (Table 5 3B), it is evident that there is no difference of opinions between different levels. But it is due to the fact that workers have never experienced any empowerment and also they are not introduced to it. That is preventing the workers from venting their views in support/against for situation regarding empowerment in the organization. The involvement has been mainly in those areas which are felt comfortable by management.

5.4 Group Activity

The factual analysis and company's progress in this area has been given in Table 5 4A and constituent analysis follows in Table 5 4B. The main factor contributing to success of teams is independence in working. Complying with the pattern followed in the last two Sections, this Section also, tries to put forth the analysis of the company's steps in light of TQM ideals and to explain the differences, whatever there are among different constituents.

1. Sustaining the interest of participants in QC is very important and the factor facilitating it is autonomy in working and continuous training. As evident from Section 4 3 2, management has consciously provided autonomy in working of the QC and it is highly regarded by the lower levels participating in QC. So, as explained under Section 5 3 also, it is evident that independence in working plays a crucial role in involving the employees. Although the issue of voluntary/compulsory participation has been diluted with doing QC in time of work by stopping the production, but still the employees may not be committed to activity. But independence in working and provision of technical and financial resources have been the contributors to teams' success.
2. Lack of feedback from employees regarding the effectiveness/ working, has caused stagnation in training curriculum. It is also responsible for not taking into cognizance the difference between opinions of workers and supervisors, regarding training. Earlier, supervisors were given classroom training at the time of induction and they were expected to train their workers in QC technique, but with the abolition of appointing

supervisors from outside, and promotions to supervisors from among workers, the newly appointed Asst supervisors (expected to lead QCs) have not been given direct training about QC. Also, the training lacks in depth as is evident from the fact that most of the workers do not know the significance of fish-bone diagram (see Section 4.3.2.4). As is evident from the Section, the training programme does not really try to equip the trainees with problem solving tools like bar diagram, tally sheet, etc. although since the recruitment of workers is done from ITIs, it can be taken for sure that they are

1984	Group leaders' training and on-the-job training to members
↓	Compulsory participation and leader appointment by default
↓	Autonomy in Working
↓	Made available financial resources and technical help
↓	Providing area for problem search

Table 5.4A Chronological Progress of MUL -Group Activity

	Top Management	Middle Management	Supervisors	Workers
Training needs	On-the-job training sufficient	Agree with top management's view	Classroom training (Direct) training needed	Classroom training (Direct) training needed
Autonomy	Sufficient autonomy	Sufficient autonomy	Sufficient autonomy	Earlier no interference in working but latest move to get area for problem search from top is unnecessary and no consultation with them
Interference from top	Specify area of problem search- will have team's energy in searching the problem	Agree with top management's view	Agree with top management's view	It is unnecessary and no consultation with them

Table 5.4B Constituent Analysis : Group Activity

comfortable with basic math. This can be seen as the reason why workers demand classroom training because they may be coming across hurdles frequently in case of solving the problem, where outside training was necessitated

- 3 Active involvement of management in recognizing the team's efforts is working as a stimulant in teams' success. The annual series of presentations before a group of senior managers, by QCs of their work area, is the present system of recognizing efforts of teams. Group leaders and group workers regard highly the painstaking effort by management in attending the presentations and recognizing the efforts of teams. Also JMD's visit to review each *Kiazen* done by teams is highly regarded by the lower levels (see Section 4.3.2.5). Workers regard it as a major stimulant in teams' success.
- 4 The latest move by the top management to specify area of problem search is supported by middle managers and supervisors but not by workers. The worker finds this move unnecessary. They extend the argument that problems' nature is localized and so what will be done if the problem, requiring immediate attention is not from the area of problem search. This again highlights one major problem in the organization, that is, of lack of consultation or feedback from levels affected by such moves.

Summary :

The above arguments show that management's role is very important in group activity's success. Also, autonomy in working has once again been singled out as the most important criteria for team efforts' success. There is no cross-functional team in the organization for quality improvement activities. They are at management levels and they are basically for solving production related issues. One cross-functional team is there in the organization, christened as Product-Development team whose members are top managers of manufacturing and marketing. It is for taking decisions regarding new offerings of the company.

5.5 Performance Appraisal and Reward System

MUL's progress in this area has been sketched in Table 5.5A and respective constituents' analysis has been carried out in Table 5.5B. As against literature's suggestions that there should be involvement of concerned employees in the appraisal and reward system, it is not happening there and so the company has lost an important avenue of involving the

Performance Appraisal	
1984	Formulation of system by Management Committee and Time & Establishment Office
✓	Full awareness of criteria to all levels
✓	Accommodation of dis-agreement of the concerned employee being appraised
✓	Full openness for approaching for grievance regarding appraisal
✓	Official Secrecy of results
Reward System	
1984	Total reward system formulated by MCM
✓	Production incentive- Workers (Union), Other levels (MC)
✓	Monetary reward for suggestions and QC
✓	Monetary award for attendance
✓	Personal recognition to teams and individuals

Table 5.5 A Chronological Progress of MUL -Performance Appraisal & Reward System

	Top management	Middle management	Supervisors	Workers
Performance appraisal				
Secrecy of results		Don't acknowledge leaking of final results	Final results come out from informal channels	-Grades of one person should not be known to other -Present secrecy policy is due to unions
Training needs		Training needed for supervisors for giving feedback to employees	Not comfortable in giving feedback to technicians and express need to be trained	Satisfied with efforts of supervisors in giving the feedback
Participation			Don't perceive importance of participation in formulation and revision of system	Agree with supervisors view
Reward System				
Recognition	Try to give personal recognition (QC presentations, JMD's visit)	Acknowledge the efforts of top management	Acknowledge the efforts of top management and are satisfied	Acknowledge the efforts of top management and are satisfied
Dissatisfaction	Union problem has affected some programmes, ceremonies			Management is withholding some information which was earlier provided so dissatisfaction
Monetary vs non-monetary		Non-monetary awards loose appeal as there are a lot of awards	View recognition more important than monetary content of award	Agree with supervisors
Production incentive		Production incentive has lost its motivation	Production incentive is most important for motivating workers	Production incentive is not an award but it is part of salary

Table 5.5B Constituent Analysis : Performance Appraisal & Reward System

employees Further analysis regarding company's progress towards TQM ideal and regarding explanation of difference of views among different constituencies, has been carried out in the following points

- 1 The classification of employees in A/B/C/C- grades cripples the work of the department for at least few days after the appraisals. As has been explained in the case (Section 4 4 3 1 and 4 4 3 2) that although officially the company does not disclose the results, the grades finally become known to every person through informal sources So the employees getting lower grades tend to show their unhappiness As came out in the constituents' analysis, due to peculiarity of human behavior, one does not want his shortcomings to come out in the open So a person getting lower grades, tends to become demotivated due to uncomfortable position when in contact with his peers who have got better grades than him So one issue is effect of disclosing result but at the heart of the problem is issue of classification of employees into winners and losers As all the counseling work takes place in private, in which person (appraised) is told about areas of improvement and his strengths, but in public, nobody knows what management thinks about his strengths So ultimately, the person graded B/C becomes demotivated This is distinctly in contrast with TQM ideal of win-win situation
- 2 The second issue is of giving feedback It is the supervisors who are to give feedback to the workers It is very difficult to communicate to a person that his performance has not been encouraging It becomes especially tough if authority giving feedback has to work in close contact with the person being appraised So the supervisors need to be trained to handle such a delicate issue The workers also, need to be trained to understand the delicacies of the matter and to better understand the other side The lack of feedback system from lower levels has again come in way of solution of this problem and it is evident from constituent analysis
- 3 The literature suggests that, ideally, employees should have a feeling that they are masters of their own destiny In the initial years of the organization, every employee was used to be given the appraisal form in which he had to grade himself and then had to satisfy his/her boss with his appraisal of self In the later years, due to phenomenal growth of the organization, it became very time consuming and then present system of appraisals evolved which has been explained in Section 4 4 3 1 Now the employees are not at all involved in the appraisal process, except at the last stage of feedback As

comes out in the constituent analysis (Table 5.5B), the workers and supervisors do not want to be involved in the appraisal system. This may be due to the fact that, over the years, with the evolution of the present appraisal system, the appraisal has become a taboo topic to talk about in the organization. In course of data collection, the researcher had to constantly persist with the people to open themselves on the subject. So with the topic being regarded as taboo, even if employees (workers and supervisors) say something about it, that may not be their actual feelings as they do not want to compromise their position before their managers.

4. The reward system is predominantly monetary. Almost for every scheme, be it productivity/ attendance/ suggestions/ QCs - for everything, there are monetary awards, although there are stray incidents of giving personal recognition to lower levels by top management like JMD's review of each and every *Kaizen*. It has not been realized upon by the policy makers (Table 5.5B) that the productivity incentive has lost its meaning as it is now regarded by workers as part of their salary. This is an evidence that monetary incentives lose their focus after some time. The personal recognition by JMD for *Kaizens*, is highly regarded by the workers (Section 4.4.3). Also, constituent analysis brings out the fact that workers regard personal recognition by the top management more important than the monetary content of the award (see Section 4.4.3.3).

Summary :

So, it comes out of the above analysis that the whole system is not moving towards TQM. The objectives of the reward system are not being met. Also the spirit of continuous improvement is not present here as the need to review the system, is not being realized. At the heart of the problem, again is lack of a proper feedback system which can produce suggestions for further improvements in the whole system and may help in moving towards TQM.

5.6 Inter-departmental Relationship

The company's progress in formalizing and changing it, has been summarized in Table 5.5A. As explained in the beginning of this chapter in Section 5.1, since the transactions between different departments is decided primarily by the managers of the departments and there is no role of lower levels in such matters (as can be seen from Section 4.4.5.1). So, constituent analysis has not been done here. There has been efforts to move towards supplier-customer

relationship between internal departments and the route for doing this has been through formalizing the transactions. Some steps of the company and learning from them has been described below

- 1 The relationship has definitely progressed from totally informal transaction which were more dependent upon the nature of relationship between managers of interacting departments, to a mix of formal and informal transaction today. But still the situation leaves a lot to be desired. The example in case (Section 4.4.4.1) shows the need for more formal transactions and also a guideline as to what steps should one take while dealing with inter-departmental problems, be it quality or delivery. The move to put the onus of warranty cost on the respective departments has forced the departments to look out more rigorously for reasons of quality problems and more closely scrutinize the supply of supplier departments. This has helped in moving the nature of inter-departmental relations one step further towards the pattern of supplier-customer relations. But this realization has not dawned upon the management otherwise, they would have established these types of measures and indicators further.
- 2 The company's management really does not regard it as an important issue as it does not figure out on the agenda of MC. Every important issue has been on the agenda of MC at one point of time or the other but this issue has never figured out on the agenda. The management is not giving any thrust to move towards formalizing the relationship. So it is an important cause behind the company's failure to set inter-departmental relationship on the pattern of supplier-customer relationship. For example, a common problem, as has come out in Section 4.4.4.1, has been the recurrence of the problems reported to be solved by the supplier department. So to drive down the importance of issues, management may have to monitor the trend in such recurrences.

Summary :

Overall, the system needs a lot of improvement, but ultimately it is the top management which holds the key to improve it. A major thrust could not be given to such efforts since MC still not considers it as an issue important enough in pursuit of quality.

5.7 Relationship with External Suppliers

The company's efforts in this area and its progress has been charted out in Table 5.6A. This section also does not contain the constituent analysis because supervisors and workers are,

1984	Informal communication between departments for quality problem
↓	Quality problems most important (As they generate delivery problem)
↓	QPCRs for more difficult and recurring problem
↓	QPCRs changed to QIRs with requirement for some immediate counter step
↓	Dilution of warranty cost on respective depts -forcing departments to formal dealing*

*No review & uniform effort to formalize it

Table 5.6A Chronological Progress of MUL -Inter-departmental Relationship

1984	No vendor base
↓	Selection of 5-6 suppliers and JV with supplier(for costly items)
↓	Development of vendor(Specification review → FPP** → Mass production)
↓	Consolidation of vendor base
↓	Technical and financial support to vendors
↓	A vendor policy every year
↓	Evaluation & auditing of vendors
1992	Quality system support and business improvement support (free → charging a fee) & encouraging to go for ISO certification
↓	Direct clearance of parts
↓	Direct communication of top management with suppliers through conferences and communicating plans in advance
↓	Elimination of vendorship
1996	Discontinuance of financial support

** First Production part

Table 5.7A Chronological Progress of MUL -Relation with Outside Suppliers

in no way involved with efforts in this area. This is evident from the case (Section 4.4.5). MUL has been able to move towards close relation with suppliers. As an indicator, one can see that 60% of the supplies are directly fed to line without incoming material inspection. The issue has been analyzed further in terms of how the relationship has moved towards TQM ideals.

1. The conscious policy of consolidation of vendor base (Section 4.4.5.1) had been beneficial in pruning the vendor base which had become cumbersome to manage, due to company's policy of having 4-5 supplier for one item. The vendor policy of having two suppliers for each item and locating both of them in different parts of the country, takes into consideration both human factors as well as possibility of natural calamities in the country. The human factors include, being taken for a ride in case of overdependence on a single supplier, strikes at suppliers' site, etc. With only two suppliers for one item, MUL has managed to control number of vendors upto a manageable limit. If it had not been so, then with MUL's policy of extending various supports to the supplier, it would have been a drain on MUL's resources.
2. A host of support facilities extended to supplier have helped MUL in improving supplier practices and have benefited MUL itself. As many of the suppliers are small in size and they do not have the requisite resources to undertake the improvement activities, it is a good practice that MUL forms a pool of such suppliers and undertakes improvement practices. This pooling (of small suppliers) saves the resources of MUL as well as reduces the cost burden on individual suppliers. That way ultimately, MUL has been the beneficiary in form of improved supplies at a minimal cost increase. Also as explained in Section 4.4.5.7, the support extended from MUL to the supplier free of cost, failed to generate commitment from supplier and so MUL changed the practice and started charging a fee for its support systems. The results of this move are yet to come, still it can be said, that this move will generate more commitment from supplier.
3. A long term relationship with suppliers is beneficial for the company. This has come from literature review and also it has been followed here. The thrust behind it is probably of Japanese collaborator. The evidence of long term relationship with the supplier is that from 1986-87 (after consolidation of vendor base) till now, on an average, vendorship of less than 1% of total suppliers has been terminated on account of

unsatisfactory relationship With long term relation and constantly expanding business of MUL, the suppliers are assured of volumes so, they can undertake quality improvement efforts.

- 4 The system of evaluation and auditing the vendors is fairly objective and so it has been able to pin-point areas of further improvement Also by evaluation, MUL tries to assess vendor's reliability to move towards raising productivity,/reducing cycle time etc In reducing cycle time, an important mean is to eliminate the need for inspection at MUL's site. This way the company has been able to move towards JIT system which aims at reducing inventory cost at company's site and improving cycle time

Summary :

So, with increasing competition in market place, due to its early efforts in consolidating the vendor base, MUL has set up benchmark in the industry as far as supplier network is concerned This is also true of MUL's service and dealer network which has been explained in the next Section MUL has developed a competitive advantage in the industry due to its supplier network As has been pointed out in APPENDIX-B (War in Small Car Market), one reason why new car manufacturers are finding it difficult to develop a car which could beat MUL's product on price basis, is significant investment needed for developing a good vendor base

5.8 Customer Orientation :

The progress done by MUL under this area has been given in Table 5 8A This area also does not contain constituent analysis As evident from Section 4 4 6, the market orientation of the company has been more dependent upon marketing and service department and sales offices and, in these departments, the decision-making personnel are middle managers and executives and these departments do not have any lower level workers So the analysis has been based on the information given Somewhere in the analysis, for finding out effectiveness of the steps taken by the company, secondary data sources have also been utilized

- 1 For an organization which has to sell via intermediaries (dealers/ stockists), it is important to keep a close tab on them (which can be regarded also as intermediate customers of the organization) MUL has been doing this through frequent communication with dealers and service stations and through various performance

indicators. It always keeps a tab on their performance and financial health as their financial health will ultimately decide the end customer's satisfaction. MUL always extends help to its immediate customer when needed, like in case of warranty claims/consumer complaints/unexpected and new problems in the field, etc. The various supports like finances and training to mechanics and salespersons of dealers and service stations has helped MUL in gaining confidence of dealers. Also a well formulated communication system with provision of feedback from dealers and MASSes, helps MUL in

1984	Emphasis on product quality
↓	Information collection about market (demand→product features→product quality→quality of product vis-à-vis competitor's→quality of service)
↓	Information collection through internal resources→external resources
↓	Increasing no. of sales outlets (dealership) - criteria -financial strength/ location→financial strength/ qualification of employees/ rationalization of network)
↓	Increasing no. of service stations and MGP stockists
1992	Service quality coming into light
↓	Asking for PDI from dealers and for complete information about customers
↓	Action on consumer complaints-separate section in service department
↓	Upgradation of dealer' and service stations' resources-financial/ skills
↓	Taking feedback from dealers and service stations
↓	Top management's annual conferences with dealers and MASSes and stockists
↓	Establishing performance indicators for service quality
↓	Auditing dealers and encouraging them to go for ISO 9002 certification

Table 5.8 A Chronological Progress of MUL -Customer Orientation

continuously improving the relationship with dealers and MASSes and be better prepared to tackle the market and customers

2. The environment , has greatly affected the MUL's steps in this area. In a close and protected economy of the '80s, with comfortable market leadership, MUL was mainly emphasizing the assurance of product quality and improving it. The movement of the country towards an open economy and entry of new players has forced MUL to also ensure service quality. The service quality is increasingly getting priority in an era of increasing consumer awareness and increased choice to customers. To ensure service quality, MUL has embarked upon a plan to get all its dealers ISO 9002 certified, so that it can be sure of providing a uniform and definite level of service quality to end customer everywhere.

- 3 Regarding efforts to satisfy end customer, it is important to know what the customer wants and what are the market conditions. To collect information about them, MUL has been utilizing new avenues day by day. It has been using a wide arena of avenues from auto-exhibitions to free service camps for data collection about customer and market. With constantly changing market research priorities, it is changing the face of its market research. As is evident from 4.4.6.1(A), more surveys by outside agencies, more objectivity of surveys, more frequent surveys have been the major changes in the information collection area. It shows that the company has been progressive in maintaining its close touch with the market.
- 4 Regarding direct efforts of the company vis-à-vis end customer satisfaction, action on each and every consumer complaint is a necessary step. The company is undertaking painstaking efforts to answer to customer in case of any complaint reaching to it. This effort is in line with customer orientation of the company.

Summary :

All the above analysis shows, that the company has been moving towards TQM ideal of closeness with customer/marketplace. There are no criteria of closeness. But when a competitor of an organization provides a product that catches customer's fancy, it clearly shows that organization has started losing its touch with the market. There is evidence that it has happened to MUL also. One example is of technically advanced features of CIELO which were first introduced by DCM Daewoo. The overenthusiasm of customers made MUL realize that it has been its fault not to provide its customers the technical features they wanted. But then it quickly came up with advanced version of ESTEEM and due to its long standing in the market and extensive dealer and service stations' network, MUL was able to maintain its market share in that particular segment of the market. Also, it showed its proactiveness, by quickly coming up with ZEN in lower end of luxury car market and the success of ZEN proves that MUL has not lost its touch with market despite being a market leader for last one decade.

5.9 Conclusion :

An interesting aspect of TQM implementation at MUL has been the changing source of thrust over a period of time. The thrust has come from two sources - one from Suzuki and second from market. In 1984, when the company was started, the thrust came from Suzuki

and so, the affected areas were those which were directly related to production like Group Activity, Empowerment and Involvement, and Commitment of Top Management. In 1992, the TQM got a renewed thrust from market due to competitive pressure and as, evident from Sections 5 5, 5 6, and 5 7, the affected areas this time have been those which directly affect organization's performance in external environment - Interdepartmental Relationship, Relation with External Supplier and Customer Orientation

CONCLUSION

6.1 Introduction :

The last chapter of the study deals with the research findings and learning from the study. Then it will try to cover limitations of the present study and suggestions for further study.

6.2 Research Objective :

The objective of the research was “to study the organizational changes necessary for successful implementation of TQM.” The change areas studied, were as follows:

- 1 Commitment of Top Management,
- 2 Empowerment and Involvement,
- 3 Group Activity,
- 4 Performance Appraisal and Reward System,
- 5 Inter-departmental Relationship,
- 6 Relationship with Outside Supplier, and
- 7 Customer Orientation

The aim of the study was to track the changes in the above areas, the nature of these changes and the ground practices to make these changes happen. Also, a constituent analysis has been performed to better understand these changes.

6.3 Findings of the Study :

The case of MUL has been presented in chapter 4. The case covers a wide area covering the seven change areas (mentioned in Section 6.2) and several related factors, prominent among them:

- Historical evolution of the organization,
- Level of participation of the collaborator,
- Labor relation in the organization, and
- Effect of government holding on the company

The analysis in the next chapter (Chapter 5) gives a detailed insight about what is going on in the organization. The seven change areas have been searched upon vigorously and a

thorough and comprehensive report, specific to those areas has been presented. Now this section aims at presenting findings of the study based on the analysis of the case. The findings have been presented with respect to each area specifically. Table 6.3A summarizes the company's achievement and shortcomings on TQM front.

A. Commitment of top Management

- 1 To show commitment of top management towards quality efforts, plant audits and review of improvement projects by top management are the employed means
- 2 Formulation of Vision, Mission and Quality Policy have negligible effect on working at ground level
- 3 Training about quality concepts is provided only to top management and not to all employees
- 4 There has been no concerted efforts to present examples before employees, which they can follow
- 5 Performance indicators, drive down the importance of issues and MUL's management deserves credit for it

B. Empowerment and Involvement

- 1 Involvement is sought and encouraged in non-controversial areas but not in controversial and taboo areas like appraisals
- 2 Autonomy in quality improvement efforts is single-most important factor determining success of such efforts
- 3 Lack of feedback from employees increases their feeling of non-involvement

C. Group Activity

- 1 Only intra-departmental teams found necessary for quality improvement and not cross-functional teams
- 2 Autonomy in working single-handedly decides success of teams
- 3 Lack of feedback from employees, hinders the realization of need for training regarding problem solving tools and group orientation

TQM Ideals	Achievement of the Organization	Shortcomings in Organization's Approach
1. Commitment of Top Management		
<ul style="list-style-type: none"> Form Quality Council to monitor TQM programme Provide direction & goal to the company Formulate Quality Policy Provide training regarding TQM and problem-solving tools Participation in training programme Empowerment to lower levels to affect quality improvement Leading by examples Resource allocation Communication with front line employees & teams Communication with customers 	<ul style="list-style-type: none"> Management committee as Quality Council Vision & Mission formulation Formulated in 1993 A systematic Annual Training Programme Outside training Resources well decentralized Visible involvement in quality efforts Financial & technical help Through plant audits information sharing With immediate customers (Dealers/MASSES) 	<ul style="list-style-type: none"> Not of much consequence to lower level employees in their working -do- No training to lower levels regarding TQM & training about problem solving tools given only to supervisors No uniform effort to ensure this from middle management Commitment to training of lower levels not fulfilled Withholding (earlier provided) information Not with end customer
2 Empowerment & Involvement		
<ul style="list-style-type: none"> Involvement in all matters related to work involvement & empowerment for quality improvement Training by providing learning opportunities 	<ul style="list-style-type: none"> Only in matters directly related to work Full autonomy regarding quality improvement efforts For persons identified to be promoted 	<ul style="list-style-type: none"> Not in controversial & taboo matters Not for potential promotees
3 Group activity		
<ul style="list-style-type: none"> Use of groups for quality improvement efforts Empowered teams Recognition of efforts Voluntary participation Training about group orientation 	<ul style="list-style-type: none"> Quality circles Full autonomy Top management directly involved Not identified as an issue 	<ul style="list-style-type: none"> Lack of cross-functional teams Of late, area of problem search identified by top management compulsory Not provided

Table continued

4. Performance Appraisal & Reward System		
<ul style="list-style-type: none"> • Participation in appraisal system • Create win-win environment • Emphasize more on intrinsic satisfiers in mix with extrinsic satisfiers • Efforts for quality improvement reinforced • Participation in formulation of reward system 	<ul style="list-style-type: none"> • Taking into cognizance the grievances • Through both extrinsic and intrinsic satisfiers • Participation in deciding production incentive through union 	<ul style="list-style-type: none"> • No participation of employees in formulation of the system & grading of self • Winners & losers are produced by the system • Overemphasis on extrinsic satisfiers • No feedback form employees and so no realization of any participation by lower level employee
5. Inter-departmental Relationship		
<ul style="list-style-type: none"> • On the pattern of supplier-customer relation 	<ul style="list-style-type: none"> • Efforts in this direction through formalization and distributing market generated warranty cost on respective department 	<ul style="list-style-type: none"> • Not regarded as an important issue in implementing TQM
6. Relations with External Customers		
<ul style="list-style-type: none"> • Single supplier & JV with suppliers • Long term relationship • Improve cycle time • Close relationship 	<ul style="list-style-type: none"> • In case of items whose production requires high investment • Over 90% of suppliers are with organization for last 10-12 years • In case of 60% supplies- no inspection of incoming material • Various support systems and good communication network to facilitate this 	<ul style="list-style-type: none"> • Two vendors for over 90% items and around 5% of items' sources more than two • Free support to vendors not successful
7. Customer Orientation		
<ul style="list-style-type: none"> • Have relation of trust & loyalty with customers • Capture customer satisfaction data • Constantly offer improvement in existing products and new products • Constantly offer improvement in service quality 	<ul style="list-style-type: none"> • To facilitate this, support facilities, & encouragement to immediate customers to improve their systems and action on customers' complaint • Progressive means employed in capturing information about both product and service quality • In last 12 years, 12 models and 17 variants of them introduced (uncompared in industry) • Encouraging dealers to go for ISO9002 certification to assure uniform & standard treatment to end customer 	<ul style="list-style-type: none"> • No regular communication with end customer after his buying • Secondary data shows that MUL is not always successful in catching customer's changing demand • Still in nascent stage

Table 6.3A MUL's Achievements and Shortcomings On TQM Front

D. Performance Appraisal & Reward System

- 1 It is regarded as a 'taboo' area to talk about
- 2 Performance appraisal divides employees into two classes of winners and losers
- 3 Organization's reward system is over dependent on monetary incentives

E. Inter-departmental Relationship

- 1 Organization does not identify it as an important issue, for the success of TQM programme
- 2 Distribution of market generated cost of poor quality (warrant cost) on responsible departments is an important means to move towards supplier-customer relation

F. Relations with Outside Suppliers

- 1 The double sourcing of majority of items is preferred by organization to reduce its dependence on single supplier
- 2 Extending various support systems to suppliers has benefited the organization in improving its cycle time by scrapping inspection of supplies and by reducing errors and defects in supplies
- 3 Free support extended to suppliers has not been able to generate commitment from them
- 4 Long term relation with suppliers has assured them of future volumes and has helped suppliers direct their resources towards quality improvement

G. Customer Orientation

- 1 Satisfied immediate customer (dealer and service network) is vital means in satisfying end customer
- 2 A well formulated and progressive communication network with immediate customers helps in maintaining responsiveness to market
- 3 Service quality is getting prominence in an era of increased consumer awareness
- 4 Negligible efforts are going on maintaining contact with end customer of the company

6.4 Learnings from the Study :

Following learnings, which are generalized in nature, can be drawn from the above findings

Commitment of Top Management

- Establishment of tangible performance measures acts as a major impetus for making any programme related to TQM successful
- Mismatch between talk and action of lower level managers dilutes focus of any effort from top

Empowerment and Involvement

- Independence in quality improvement efforts is most important factor deciding their success

Group Activity

- Lack of training and stagnation of training curricula affect the problem solving capability of teams

Performance Appraisal and Reward System

- Openness in evaluation system helps in assuring employees of their careers and so diverts their energy to work and quality improvement
- Monetary incentives, especially likes of production incentive, soon loose their appeal of being some form of reward

Inter-departmental Relationship

- Without realizing that inter-departmental relationship determines in a major way, the quality of final offering, it can not be modeled on pattern of supplier-customer relationship

Relationship with Outside Suppliers

- Support systems, extended free to supplier, fail to generate commitment from suppliers' side

Customer Orientation

- Performance indicators regarding quality of service, provide avenues of improvement
- A well established communication network with dealers and service centres, is necessary for being responsive to market

6.5 Limitations of the Study :

The major limitation of the study is its generalizability because of a single case in a particular industry. Ergo, the findings and learning are limited to the organization under study. Also, only the internal environment of the organization has been researched.

The findings are based on a single case which has been built up primarily on unstructured interviews with a limited number of employees. It has not been possible to support the facts with quantitative data, although it has been tried to give sufficient references in the case to corroborate the facts, whenever necessary.

6.6 Suggestions for further Research :

This study itself can be extended to data collection about the external environment of the company (from suppliers' and customers' sides). Also, by taking a number of cases in the same industry, generalizations of the findings can be facilitated. Further, by constructing TQM constructs with the help of literature, success or failure of the organization can be judged.

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APPENDIX-A

Questions Explored

For interview purpose, the study viewed the organization as made up of four levels on the basis of functions and these levels are as follows:

- 1 LEVEL 1 CEO and Functional Heads
- 2 LEVEL 2 Middle Managers and Low Level Managers
- 3 LEVEL 3 Supervisors
- 4 LEVEL 4 Workers

The discussion regarding the issues raised above, was done with a cross-section of each suitable level with respect to issues involved. Below there is a list of major issues that were discussed with respective levels. Within each level, questions were put up to relevant personnel.

A. Interview with LEVEL 1 will focus on

- Quality Council Formation and its functions,
- Establishment of vision, Mission and Quality Policy statements and contributors to their formation, basis etc
- Drive for TQM programme implementation (for transformation of the organization in consonance with the 12 points in part B of this write-up),
- Need for TQM programme and its communication to lower levels,
- Delegation of authority (how much and what day-to-day decision making have been abdicated to down levels),
- Methods adopted for motivating the employees and what is the effectiveness of those methods,
- Personal contact with customer and with what objective, additional measures taken after TQM start to capture customer satisfaction,
- Policy about outsourcing and suppliers,
- Establishment of organizational goals, basis of them, goal alignment efforts regarding lower level employees,
- Performance appraisal system for every levels and involvement of employees in it,
- Reward system,
- Training and development program to prepare the whole organization regarding TQM and achievement level of objectives, and
- Role of union in quality efforts of the organizations, union thinking about the programme

Interview with LEVEL 2 will focus on

- Delegation of authority (how much and what day-to-day decision making have been delegated to lower levels),
- Training and development efforts concerning you and lower levels,
- Goal alignment,
- Performance appraisal system of your level and levels below you and involvement of employees in it,
- Reward system,
- Visible involvement of LEVEL 1 AND LEVEL 2 and its effect on morale/motivation of employees,
- Closeness with customer and with what objective, additional measures taken after TQM start to capture customer satisfaction, trend in market share, sources for

getting customer complaints(to be asked to marketing and manufacturing functions),

- Mode of selecting the supplier and criteria for the same, experience of single sourcing etc (to be asked to purchase function),
- Involvement in which type of decisions
- Improvement projects carried out, teams involved, team formation, team leadership, source of problem identification, approval of improvement project and improvement methods,
- Cross Functional Teams and Quality Circles and their effectiveness,
- Situation about any suggestion scheme from lower levels,
- Union's effectiveness regarding grievance handling, and
- Methods for soliciting union's cooperation in implementing quality efforts

Interview with LEVEL 3 will attempt to find out

- Involvement in what type of decisions,
- Empowerment(Increase and decrease in day-to-day decision making powers, involvement in issues related to their works),
- Participation in training and development efforts and it use and effectiveness,
- Goal alignment (realization of organizational goals and how it is affected by self work),
- Performance appraisal system (satisfaction in measures and participation in it),
- Reward system (any new measure adopted and view about all the measures),
- Visible involvement LEVEL 1 AND LEVEL 2 and how you view its sincerity,
- Customer relation - Closeness with customer and with what objective, additional measures taken after TQM start to capture customer satisfaction , trend in market share, sources for getting customer complaints(to be asked to marketing and manufacturing functions) ,
- Supplier Relation - Mode of selecting the supplier and criteria for the same, experience of single sourcing etc (to be asked to purchase function),
- Involvement in which type of decisions
- Participation in improvement projects carried out, teams involved, team formation, team leadership, source of problem identification, approval of improvement project and improvement methods,,
- Participation in Cross Functional Teams and Quality Circles and their effectiveness vis-à-vis goals set and
- Situation about any suggestion scheme from lower levels. and
- Implication of documentation / standardization

Interview with LEVEL 4 will focus on

- Involvement in what type of decisions,
- Empowerment(increase in day-to-day decision making powers, involvement in issues related to their works),
- Participation in training and development efforts and it use and effectiveness,
- Goal alignment (realization of organizational goals and how it is affected by self work),
- Performance appraisal system (satisfaction in measures and participation in it),
- Reward system (any new measure adopted and view about all the measures),
- Visible involvement LEVEL 1 AND LEVEL 2 and how you view its sincerity,

- Customer relation - Closeness with customer and with what objective, additional measures taken after TQM start to capture customer satisfaction , trend in market share, sources for getting customer complaints(to be asked to marketing and manufacturing functions) ,
- Supplier Relation - Mode of selecting the supplier and criteria for the same, experience of single sourcing etc (to be asked to purchase function),
- Involvement in which type of decisions
- Participation in improvement projects carried out, teams involved, team formation, team leadership, source of problem identification, approval of improvement project and improvement methods,,
- Participation in Cross Functional Teams and Quality Circles and their effectiveness vis-à-vis goals set,
- Situation about any suggestion scheme from lower levels,
- Changes in Job design (like job enrichment, job enlargement and views about them),
- Role played by union in recognizing the individual efforts in quality field, satisfaction with it,
- Openings for venting grievances and their handling, and
- Implication of documentation / standardization

APPENDIX-B

WAR IN SMALL CAR MARKET

"Manufacturing a small car is like producing a miniaturized watch. It needs specialized technology."

- R C Bhargava, MD, Maruti Udyog Ltd

The potential customer base of 10 million families is growing every year to accommodate an additional one million households with enough financial strength to buy their first car. What their concept of first car is? Just look at the market share of Maruti 800. To the world's auto superpowers, this mini-car segment (of what is called 'people's car') represents a paradigm shift, they can't ignore. For India's small car market boasts the smallest price tag ever attached to a bumper. At Rs 2.10 lakhs¹, Rs 6600 crore Maruti Udyog Ltd's Maruti 800 has set a pricing benchmark that cannot be matched by any existing car today. So instead of simple transplantation of existing model, the auto manufacturers setting shop in India, are going to their drawing boards, to design a car with new technology, new material and new styling, that will allow manufacturing costs to low enough for a people's price for the people's car. As recognized by Teruo Fujisaki, CEO, S1el Honda Cars India. "It is difficult to beat MUL which has made substantial investments, set up an excellent distribution network and localized operations." So competition will have to offer products which will cost more but also offer more - performance features and looks front. The basic technical features of the small car has to be as follows

Engine 500-1000 cc, 3 cylinders in a single line, 80 BHP

Transmission 5 Gears including reverse Automatic transmission optional

Drive Front wheel Drive (to eliminate the need for differential and drive shaft)

The cars which are in pipeline to be designed are given in the Table B-1². The Indian small car market consisting about 300,000 units, is growing at a rate of 25 % per annum, adding sales of 75,000 units per year. According to analysis⁶, the commercial viability from Indian sales alone lies in wait for just one - or at best two automakers. But the one who makes it first, will have created a product which can dominate every emerging market in the world on value for money equation.

¹ Taken from Business Today Sept - Oct 6, 1996, pp 80-91

² Taken from Business Today, Sept 22 - Oct 6, 1996, pp 80 - 91

COMPANY	MODEL	ENGINE	MILEAGE(km/litre)	EST PRICE (Rs Lakhs)
DCM Daewoo	TICO	800 cc, 3 cylinder in line	17.4	3.5
Huandai	N A	-do-	N A	2.25
Siel Honda	beat	-do-	15.42	3.2
Daihatsu Kirloskar	Mira	500cc, 3 cylinders in line	19	3.5
Kinetic Engg	City Car	-do-	19	1.5
Kia Motors	Pride Start	1100cc, 4 cylinders in line	16.7	3.8
Nissan Corp	Micra	1000cc, 4 cylinders in line	16.7	3.8
HM Mitsubishi	Colt	1300cc, 4 Cylinders in line	12.37	4.0
Sabaru	Vivio	658cc, 4 Cylinders in line	16.97	3.7
GM-HM	Opel Corsa	1200cc, 4 Cylinders in line	14.37	3.8
Mahindra Ford	Ford Fiesta	1100cc, 4 Cylinders in line	13.37	4.0
PAL Fiat	Cinquento, Polo	900cc, 4 Cylinders in line	16.37	2.9
PAL Peugeot	106	1000 cc, 4 Cylinders in line	15.71	3.7
Renault	Cilo	1200cc, 4 Cylinders in line	15.4	3.7
Telco	Indica	1000cc, 4 Cylinders in line	15.18	2.0
Eicner- VolksWagon	Polo	1000cc, 4 Cylinders in line	15.33	3.6

Table B-1 New Cars Coming in Small car Segment

APPENDIX-C

PRESENT FORMIDABLE COMPETITORS OF MUL

I. DCM Daewoo Motor Ltd. :

A JV between DCM Ltd and Korean auto major Daewoo, it was established in 1994 with Daewoo picking a 51% stake in JV between DCM and Toyota with majority of shares being off loaded by Toyota, in favor of Daewoo. Daewoo further increased its stake to 75% in 1996. Daewoo is planning to invest \$ 1bn in its facility at Surajpur in Uttar Pradesh. The starting capacity at its first plant at Surajpur to make Cielo was 25000 units per annum which it was planning to increase upto 62000 by the end of year 1996. Its first car - Cielo has been in premium segment and it is the first car to present real challenge to MUL in this segment. It is planning to introduce the first competitor model TICO, by 1997 end to present the first challenge to MUL in small car segment. DCM Daewoo has planned to increase its capacity to 150,000 by the end of 1997³.

II. Hindustan Motors :

It was incorporated in 1942. Its production facilities are at Calcutta. Its models have been based on British models, like Ambassador is based on Morris Oxford of '50s and Contessa Classic is based on Vauxhall Victor of '70s. Till MUL's entry, it was market leader in passenger car market but now it is very distant in the list. To stay in the market, it has gone into a no. of collaborations.

JV with General Motors Corp of US Established in equity structure 50/50, its production facility is at Halol, Gujrat and starting capacity has been 20,000 for Opel Astra. The capacity is expected to go upto 100,000. The planned investments are over \$100 million. Opel Astra is in the lower segment of Premium car market.

JV with Mitsubishi of Japan This venture is producing 1.5 lit Lancer model of Mitsubishi. Local content is 40% in starting which is expected to go up to 75%. The launch of the model is expected in 1997 with an initial production capacity of 5,000 units which is planned to be increased to 30,000 by year 2002.

III. Mahindra-Ford :

Rs 2782 Crore Mahindra & Mahindra (M&M) is an established name in utility vehicles market and off-road vehicles named Jeep \$ 168.83 bn Ford Motor Corp of US has established a 50:50 JV with M&M christened as Mahindra-Ford Motor Ltd. The models being introduced are world renowned model of Ford - Ford Fiesta and Ford Escort. The initial production capacity is 25,000. The production facilities are at Nasik.

IV. Premier Automobiles Ltd. :

It is another old war-horse of Indian car market. It was established in 1944. In collaboration with Chrysler, it started its first production. In 1954, it collaborated with Fiat to assemble Fiat cars. In 1981, it started producing Fiat 124 body for 118 NE models. It is also going for JVs with foreign auto majors to stay in the competition. It is increasing its capacity for 118 NE models, from 39,500 to 50,000.

JV with Peugeot This is for assembly of Peugeot 309 model. This year the production of the company ran into troubled waters due to labor problems at its production facility at Kalyan. This JV is searching for another partner to develop production site for this model at Kalyan.

JV with Fiat It is importing SKD and CKDs of Fiat's model UNO. Fiat Uno has been a runaway success in the 'B' segment of passenger car market. The JV is worth \$ 257.6 million. In April 1996, the capacity was to import 3000 kits which is planned to be increased to 70,000 kits by year 2000.

APPENDIX-D

NEW ENTRANTS IN INDIAN CAR MARKET

In this, those manufacturers have been included who have either not introduced any model in the country or have not completed their first year of production or who are operating at a small scale

(I) Mercedes Benz India Ltd This is a JV between Mercedes Benz(51%) and Tata Engineering and Locomotive Company Ltd (49%) It is assembling Mercedes Benz E class car in Telco's plant at Pune from Sept 1995

(II) Eicher Volkswagen This is JV between Eicher group and Volkswagen AG to make a small car in less than 1000cc segment

(III) Sael Honda Cars India A JV between Sael group and Honda Motors of Japan, it is planning to introduce Honda's highly successful model CIVIC in Indian Market

(IV) Rover Sipani A JV between Rover Motors of UK and Sipani Automobiles has entered into premium car market and planning to enter small car market

(V) Kia Motors It is planning to design a small car for Indian market

(VI) Kinetic Engineering Rs 204 crore Indian company is vying for a share of small car market in India

(VII) Daihatsu Kirloskar Motors A JV of Daihatsu Motors(part of Toyota Motor Group) and Rs 1800 crore Kirloskar group is targeting small car segment

(VIII) Hyundai The only foreign company to be allowed a 100 % owned subsidiary in India It is planning to launch ACCENT model in Premium segment

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